

## yl:geography

## MARJORIE HENRY

N THE last lesson, I shared with you, generally, on the map-reading question. In this week's lesson, I will begin to discuss the skills that were tested in the last examination, May 2010. It is not possible to publish the map extract that was given in the examinations. What I will do, however, is to discuss the skills that were included in the question. These were -

- $\ensuremath{\bigcirc}$  Six-figure grid reference
- $\ensuremath{\bigcirc}$  Giving compass direction
- $\bigcirc$  Bearings
- $\bigcirc$  Measuring distance
- O Calculating gradient
- $\mathbf{O}$  Description of drainage and settlement
- O Explaining factors that determine the distribution of agriculture

I will now review grid reference.

On any given map extract, there is a grid system. This is a system of vertical and horizontal lines which divide the map into numbered squares which allow us to state the position of any point. The vertical lines, those running from north to south, are called EASTINGS. They increase in numbers eastwards. The horizontal lines, those running from east to west, are called NORTHINGS. They increase in numbers northwards. Refer to the diagram below.



(SOURCE: SKILLS IN GEOGRAPHY IN SECONDARY SCHOOL BY V. A. RAHIL)

To state the location of a place, after you have identified it on the map, you first take the reading of the easting, the vertical line to the west (or left) of the place, then the northing, the horizontal line to the

## Looking at paper 1

## **(part 4)** -

south (or bottom) of the place. In reference to the diagram below, the location of the park would be 3659.



This is a four-figure grid reference and it is often used to identify an area. The six-figure grid reference is usually used to give the exact location of a point.



Let us give a six-figure grid reference for the school in the diagram above. Here are the steps to follow:

1. Divide the space between the two eastings, 36 and 37, into 10 equal parts.



2. The third line falls on the location of the school. The easting for the school is, then, 363.

3. In a similar manner, divide the space between the two northings 59 and 60 into 10 equal parts.

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-				
1-				
	SCHOOL			
-			-	

4. The second line from northing 59 falls on the school. The northing for the school then is 592.

5. The six-figure grid reference for the school is 363592, the point where both grid lines intersect.

Please note that you are expected to estimate the third and the sixth digits in the six-figure grid reference, however, practise doing the divisions within the grid to help you to make an accurate decision. In the actual examination you can get a bit of paper, mark off the position of the grid lines on it, use your rulers to do the equal divisions on the paper, use that paper to help you in arriving at the correct answers.

The eastings and northings do not always intersect snuggly on the point for which you need to give the six-figure grid reference. You must still apply the rule where you use the vertical line to the west (left) and the horizontal line to the south (bottom) of the point or place. When the place falls on the given grid line on the map, the third or sixth digit would be zero (0). For example, if the school were located exactly on the northing 59, the northing reference for it would be 590. A similar situation exists if it were located on the easting 36. The reference would be 360.

Now find a map extract and practise locating places using both the four-figure and six-figure grid references. Remember, in stating grid references, give the eastings before the northings.

Marjorie Henry is an independent contributor. Send questions and comments to kerry-ann.hepburn@gleanerjm.com





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	Mac	chinery Disposal	Account		T
2009		Ş	2010		ļŞ
Dec 31	Machinery Account	16 000	Dec 31	Provision for Depreciation	5 760
				Cash	8 000
				Loss on Sale	<u>2 240</u>
		16 000			16 000

Reason	ing:
[>1]	The formula for this type of Provision is: (Cost – Accumulated Depreciation) x Rate Where (Cost – accumulated Depreciation) is called Net Book Value.
[>2]	This means that depreciation for December 2010 is to be provided for the Sold Machine.

WORKINGS:

[w1]	Credit the Machinery Account with the actual cost of the sold machine \$16 000. The %8 000 is the cash received from the sale, not the value of the machinery.
[w2]	(Cost of Machine – Accumulated depreciation) x Rate 2009: (\$32 000 − 0) x 20% = \$ 6 400
[w3]	2010: (\$32 000 – 6 400) x 20% = \$5 120
[w4]	Accumulated Depreciation of Sold Machine (Cost – Accumulated Depreciation) x Rate 2009: $($16\ 000 - 0) \times 20\% = $3\ 200$ 2010: $($16\ 000 - 3\ 200) \times 20\% = $2\ 560$ \$5\ 760 This amount will be taken out of the provision Account as the machineny is no longer in use
	This amount will be taken out of the provision Account as the machinery is no longer in use

See you next week.

Roxanne Wright teaches at Immaculate Academy. Send questions and comments to kerry-ann.hepburn@gleanerjm.com



Best Overall CSEC performer She'niele Grant (left) of Wolmer's Girls' School is congratulated by Minister of Education Andrew Holness.

## yl:social studies

# Choosing the right career

MAUREEN CAMPBELL

Contributor

THE TERM career is used to refer to the particular job, occupation, or vocation a person has chosen to pursue.

## **CHOOSING A CAREER**

There are many factors that must be considered when planning a career.

O It must be determined whether there are certain goals that you wish to obtain through the work that will constitute your career.

O You must consider whether there are certain special skills or interests that should be incorporated into your career.

O You must decide if there are any monetary requirements for a fulfilling career and if so, what they are.

## FACTORS THAT AFFECT THE CHOICE OF A CAREER

- O The factors that affect the choice of your career can be extrinsic, intrinsic or a combination of both.
- O You may be influenced by the professions that your parents favour.
- ${\rm O}$  You may follow the career paths that your educational choices have opened up for you.
- O You may choose to follow your passions, regardless of how much or how little money you will make.
- You may choose a career because it pays the highest salary.

O Skills and interests are also taken into consideration when making choices about what to choose as a career.

O Your values, attitudes and beliefs about what is important in your life are of utmost importance.

## **EXAMPLES OF VALUES INCLUDE:**

Autonomy: making your own decisions, independence of action

Authority: having influence over others

Variety: change and diversity in tasks, places, people

Service: helping or caring for others

Economic reward: high salary, property prestige having achievements recognized

Social interaction: having pleasant, friendly contacts Creativity: being original, developing new concepts

**Creativity.** Define on your and the sense of your personality available of your personality ava

**Temperament:** is the aspect of your personality expressed by the style in which you deal with people or approach tasks. It also influences your feelings and emotions and determines how you will react in various situations.

Opportunity: is there a match between your skills and abilities and the requirements of the choice made.

## SELF-EMPLOYMENT

Being self-employed means that you work for yourself and not for a third party or company. This means that you are your own boss and use your skills and abilities to make money and pay yourself. It is an alternative that many people are going for, considering that jobs are hard to come by these days, and when they do get one there is no guarantee that it will last.

## ARE YOU FIT TO BE SELF-EMPLOYED?

When thinking of going into self-employment, there are factors that you need to consider to determine whether you are fit for this type of employment.

O To begin with, self-employment calls for skills and abilities.

• You must be aware of the limitations that come with self-employment. One of these is the fact that in this working arrangement, you are not assured of a regular flow of income. This means that unlike the employed person, there are times when you will have to go without a salary when things are not working out well. The other bad side is that you will need to make arrangements for your sick pay and pension as well.

O The type of business you may want to run as a self-employed person should be something you enjoy doing.

## CAREER

## continued from page 12 WHY IS SELF EMPLOYMENT SO ATTRACTIVE?

### Autonomy

You no longer work for a boss or for a company and you are in charge of your own destiny. The buck stops with you; you will be solely responsible for the work that you deliver and the advice that you give your clients.

## You will work your own hours

You may not be able to watch the clock nor count the hours.

## You should feel good about doing work that benefits you and not someone else

You are your own boss so the entire advantage of your work stays with you; you are in charge of your own destiny. This is a big benefit of self-employment.

## **DISADVANTAGES:**

O ne of the most significant disadvantages of self-employment is that you may face a personal legal liability if you make a mistake or a client is not satisfied.
 O There is a risk that you will sometimes be without chargeable work and there may be no money coming in for a period of time.

• You will need to manage your cash flow in a disciplined manner, maintaining cash reserves to cover any lean periods and ensure you have sufficient cash available to pay business expenses.

O On becoming self-employed, you are the business. If you don't do it, it either doesn't get done or it doesn't get done right.

## AS A SELF-EMPLOYED PERSON YOU MAY:

- At times have to make some tough decisions for the business sake; you may need to sacrifice some time with family and friends in order to deliver the project for your client.
- ${\bf O}$  Occasionally, need to work long, sometimes crazy hours to meet a deadline.
- O Feel stressed but ultimately, it will be on your terms; you are in control.

## FOR YOUR INFORMATION:

There is no doubt that there are some serious challenges associated with being self-employed.

 ${\bf O}$  You will need the support, encouragement and flexibility of family and friends.

O You may need to find a mentor to help you maintain focus on your goals.
 O If you have health problems you will need to be realistic about how these challenges will affect your ability to operate a self-employed business.

• Do you have trouble getting out of bed or wake up with a bad attitude to work? If so, then think carefully about whether you currently have the self-discipline you will need to start your own business and the ability to make it a success.

## ACTIVITY

1. Define career and self-employment.

2. Give three reasons why individuals should carefully decide on a career of their choice.

- 3. Outline three things an individual must keep in mind when choosing a career.
- 4. State three reasons why individuals become self-employed.
- 5. Suggest three advantages and three disadvantages of self-employment.
- 6. Would you advise someone to become self-employed? Give two reasons for your answer.

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## The metaphor

## NATASHA THOMAS-FRANCIS

Hello, all. This week, I would like us to take a closer look at the metaphor.

A writer uses a metaphor when he/she compares one thing, object or person to another. It is different from the simile in that the simile says one thing is like another. The metaphor says one thing is another. The comparison is implied. Metaphors invite us to discover similarities between things. This device appeals to our five senses, our emotions and our powers of thinking. Consider the following poem:

'Dreams' by Langston Hughes:

Hold fast to dreams For if dreams die Life is a broken-winged bird That cannot fly.

Hold Fast to dreams For when dreams go Life is a barren field Frozen with snow.

The poem is about what life would be like without dreams/hopes. The poet implies that when dreams die, life is both unproductive and unfruitful. He compares that kind of life to a "broken winged bird/That cannot fly" and a "barren field/Frozen with snow". How effective are these metaphors?

Take a look at the following metaphors. Try to identify and explain each:

- 1. He wormed his way through the thick vast crowd of people who were gathered for a celebration.
- 2. The night was a ribbon of moonlight on the sandy beach.

3. I gazed intently at the red lurid wreckage of the sunset smouldering in the west.

4. The water's surface mirrored the palms that grew by the edge of the pond.

5. Life's but a walking shadow, a poor player that struts and frets his hour upon the stage.

Now let us look at the following poem. How many metaphors can you identify?

## Silver Wedding (by Vernon Scannell)

The party is over and I sit among The flotsam that its passing leaves, The dirty glasses and fag-ends: Outside, a black wind grieves.

Two decades and a half of marriage; It does not really seem as long, And yet I find I have scant knowledge Of youth's ebullient song. David, my son, my loved rival, And Julia, my tapering daughter, Now grant me one achievement only: I turn their wine to water.

And Helen, partner of all these years, Helen, my spouse, my sack of sighs, Reproaches me for every hurt With injured, bovine eyes. There must have been passion once, I grant, But neither she nor I could bear To have its ghost come prowling from Its dark and frowsy lair.

And we, to keep our nuptials warm, Still wage sporadic, fire-side war; Numb with insult each yet strives To scratch the other raw.

Twenty-five years we've now survived; I'm not sure either why or how As I sit a wreath of quarrels set On my tired and balding brow.

\*flotsam (line 2) - wreckage found floating \*fag-ends (line 3) - cigarette buts \*ebullient (line 8) - exuberant, high spirited

The persona in this poem is quite dissatisfied with his marriage; he seems to be merely enduring it. Even though the poem begins with reference to a silver wedding anniversary celebration, there are several images of death, signifying the end of his relationship with his wife.

I have provided an explanation for five of the metaphors in the poem:

• The party is over and I sit among/The flotsam that its passing leaves (lines 1-2). The flotsam refers to the garbage (dirty glasses, cigarette butts) that has been left after the anniversary celebration.

And yet I find I have scant knowledge/Of youth's ebullient song (lines 7-8). Youth's ebullient song refers to the happy times the couple shared in the early stages of their marriage.
 David, my son, my loved rival (line 9). This suggests that his son, David, is a challenge to him. He shares a contentious relationship with his son.

I turn their wine to water (line 12). This is an example of biblical allusion: when Jesus turned the water into wine at a wedding, which made the guests happy. This line suggests, however, that the persona makes his children feel miserable.
 Helen, my spouse, my sack of sighs (line 14). The persona's wife, Helen, has become a burden to him (a sack normally contains a load).

Now, you try to explain the other metaphors found in the poem:

1. ...bovine eyes (line 16)

2. There must have been passion once.../To have its ghost come prowling from/Its dark and frowsy lair. (lines 17-20) 3. And we, to keep our nuptials warm,/Still wage sporadic, fire-side war (lines 21-22)

4. To scratch the other raw (line 24)

5. As I sit a wreath of quarrels set/On my tired and balding brow (lines 27-28)

Do have a productive week! Blessings!

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## yl:english language

## yl:history

Contributor

CONOMIC, POLITICAL and ideological factors influenced the United States' interest in the Caribbean up to 1962.

The Caribbean has had a long relationship with the United States (US), its northern neighbour. The American War of Independence altered the nature of that relationship, however, as the United States was no longer governed by the laws of Britain and, thus, could not legally trade with British territories.

While British territories suffered from a scarcity of food for slaves and higher prices for all supplies, American investors turned their focus to non-British territories – chief among these being Cuba. The US set its sights on Spain's empire, as Spain became increasingly weak and eventually lost its superpower status with the loss of its primary colonies to its European rivals.

The *Monroe Doctrine* of 1823 primarily shaped US involvement in the Caribbean in the 19th century. This policy statement was issued by President James Monroe who issued a stern warning to European countries that the Americas was closed to further ownership/colonisation by European countries.

President Monroe went as far as to state that America would regard any attempt to re-colonise any territory that had gained its independence as a direct threat to the US. This was primarily directed at Spain who, at the time, was busy trying to recapture its Latin American territories.

This ideological position was expanded throughout the 19th century, as the principle of *Manifest Destiny* became entrenched in the American psyche. This was a belief that the US was destined by God to dominate the Western hemisphere 'from the Atlantic to the Pacific' - a belief which fuelled American dreams and actions.

This belief resulted in a very aggressive and domineering attitude on the part of the US. It led to the Spanish-American War of 1898 between the US and Spain.

Cuba was, at that time, embroiled in armed struggle to gain its independence from Spain.

The Americans seized this opportunity

## United States and the Caribbean

to further undermine Spain's influence in the region. Their participation in the war brought swift defeat to Spain and heralded the emergence of the US as a world power. The end of the war also signalled greater US political interest in the region as well as increased economic investments. The region was important in helping the US to fulfil its manifest destiny for the following reasons:

. Its proximity influenced defence issues. The security of the US depended on its control of neighbouring territories to ensure the safety of its borders, its citizens and its

property.

2. The Caribbean possessed a variety of raw materials that the US wished to exploit in its own economic interest. Agricultural enterprises such as sugar and banana attracted US investors at first, but bauxite, oil and tourism as well as railroads became increasingly important outlets for US investment up to 1962.

Check Caribbean represented a large potential market for US manufactured goods. This would further encourage the growth of industry, thus, the creation of wealth.

With large populations of mainly unskilled, unemployed labour, US capitalists saw the Caribbean as potential source of cheap labour. Many Caribbean nationals were used in the construction of the Panama Canal at the turn of the century and, gradually, there was a steady stream of emigrants headed for the US, especially after the Second World War.

US policy during the first decades of the 20th century was nationalistic, expansionist and aggressive, and was based on feelings of racial and cultural superiority by the American people. This ideology is often described as the Big Stick Policy and is often illustrated by actions such as the taking of the Panama Canal from Colombia and the issuing of the Roosevelt Corollary to the Monroe Doctrine (1904).

The *Roosevelt Corollary* was issued by President Theodore Roosevelt and asserted the right of the US to intervene in the affairs of the neighbouring states if there was perceived to be any threat to American lives and investments. This document is important as it marked yet another turning point in US-Caribbean relations. The Corollary had, in effect, declared the US the ruler of the Caribbean basin and made clear American intention to rule by force if necessary.

The Roosevelt Corollary paved the way for American intervention in the region as it "accorded the US government the power of an international policeman and implicitly and explicitly, it undermined the independence of the republics within the hemisphere".

The Corollary stated clearly that America was not interested in acquiring colonies and that it would not interfere in any country that was stable and prosperous.

The Big Stick polices of the US

government caused great unease and resentment throughout the Caribbean. The US found itself increasingly portrayed in a negative light. Many of the smaller, poorer states resented the manner in which the US used its increasing economic wealth to enforce its policies. Critics regarded many of these policies as contrary to the best interest of these territories. This attitude was described as Dollar Diplomacy.

In an attempt to repair its image, the US embarked on a new approach to its neighbours. In the 1930s, the administration of President Franklin Roosevelt pledged itself to pursue the policy of a "good neighbour". This good-neighbour policy witnessed the US withdrawing its claims to rights of interference in the governments of other countries. Consequently, the Platt Amendment was annulled in 1934 and a 1936 treaty ended US right to intervene in Panama. There was also the creation of the Peace Corps that was to foster better relations between the US and its neighbours.

These developments continued until the Second World War (1939-1945) which signalled the start of the Cold War. American policy in the Caribbean underwent another drastic change. The rise of communism resulted in the formation of two major political power blocs - communist and anti-communist states. The Soviet Union was the leader of the Communist bloc while the United States emerged as the leader of the anticommunist group. The United States was now determined to keep its 'area' free from the influence of communism. To this end, it tightened control over the Caribbean basin. Countries in the region were expected to sign agreements and were provided with money and military assistance in order to prevent them succumbing to the temptation to enter into any negotiation with communist interests.

The US also developed new and more powerful weapons, many utilising nuclear power. The Panama Canal assumed greater importance due to its strategic location. The US government began to view its security in terms of the canal's safety and security. The 'communist threat' became one of the most important factors in US-Caribbean relations from the 1960s. The work of the Central Intelligence Agency (CIA) became important in the region during this period and has continued to the present. In 1962, the United States and the Soviet Union almost went to war over the incident known as the Cuban Missile Crisis.

## SUMMARY

The United States influence extended in most Caribbean territories. Additionally, US relationship with the region was characterised by four objectives:

 The formation of alliances to prevent interference by other powers.
 Regional support for US policies on the international scene.
 The encouragement of trade.

4. The protection of US interests.

In order to ensure the achievement of these objectives, the US maintained steady interest in the affairs of the region to guarantee governments that are friendly towards US interests and to maintain peace and stability in the region.

## SOURCES

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## yl:office administration



## HYACINTH TUGMAN

NCE YOU have given some thought to your immediate and long-term career goals, you will be ready to begin your job search. In searching for a job you will need to:

O Locate a prospective employer

- O Prepare a résumé and cover letter, and send them to the prospective employer
- Complete a job application form
- O Obtain an interview
- Follow up on the interview

There are many places where you can search for a job: the newspaper, employment agency, electronic media, personal contact, trade journals, magazines and company's newsletters.

Many organisations utilise employment agencies to assist in the recruitment of staff. However, the person who wishes an agency to find him/her employment must first register with that agency and must accept the terms and conditions laid down by the agency.

## COMPILING INFORMATION PERTAINING TO A VACANCY

It is essential that an applicant gather as much information regarding an advertised post. In large organisations, details regarding a vacant position can usually be obtained from the human resources department. In a small organisation, this type of information may be obtained from the person with whom the recruit is to work. In addition, factors relating to training and qualification, salary, fringe benefits, career advancement and the image of the firm must be taken into consideration when seeking employment.

## **JOB DESCRIPTION**

A person who has been recruited to do a job must be sure that the duties and responsibilities of the position are understood. Many organisations give their employees job description. A job description explains the nature of the job, duties and responsibilities.

There are three main parts of any job description.

## **1. THE DESCRIPTION ITSELF**

This section includes a summary of the overall functions of the position and a detailed list of the specific tasks and responsibilities of the job.

## 2. KNOWLEDGE AND SKILL REQUIREMENTS

This section specifies the minimum education level and/or training required for the job.

## **3. ACCOUNTABILITY**

This section identifies who the employee's supervisor will be. It may also describe any equipment, expenditures or other operations for which the employee will be held responsible in the course of performing job tasks.

## **APPLYING FOR A POSITION**

Once you have located a prospective employer, your next

step is to prepare a cover letter and a résumé. A cover letter is your chance to sell yourself to the employer. It should convince the employer to call you for an interview.

A cover letter should not be more than three or four short paragraphs that tell the employer when and where you heard about the position and explain why you feel your education and background qualify you for the job. Some companies may ask you to fill out an application form as well as submit a résumé.

A résumé is a written summary of your qualifications that you prepare when looking for a particular position. A résumé should have sections of information in the following order:

- Your name, address, telephone and e-mail address
- O Other personal information date of birth
- O Objectives
- O Educational background
- Employment history
- O Hobbies, interests, activities and special abilities
- O Reference

Your résumé should be clearly written and well organised. Make certain that your spelling, grammar and punctuation are perfect. Try to keep your résumé to one page.

From the information you have read, prepare a résumé since you may need one for this summer. Continue to work hard and never give up. I will continue this lesson next week.

Hyacinth Tugman teaches at Glenmuir High School. Send questions and comments to kerry-ann.hepburn@gleanerjm.com



Miss Jamaica World 2010 Chantal Raymond (right) raps with Calabar High boys following the 'Peace & Respect for All @ Champs & Always School Tour. Looking on (from second right) are the chairman of the Students for Transformation (SFT), Howard Chamberlain, and Chantal Cogle, SFT member.

## yl:principles of business

## Needs and employment



Custos of Kingston Steadman Fuller (left) and Glenroy Cumberbatch (right) rap with Ardenne High School's Ayala Bennett (second left), Wolmers' She'niele Grant (centre), and Javion Plunkett (second right) of York Castle High School. These top performers in the 2010 CSEC exams were awarded for their hard work during the Jamaica Association of Principals of Secondary Schools' National CXC Awards Ceremony for 2010, held at Abe Issa Auditorium, St George's College, on Friday, March 4.

### YVONNE HARVEY Contributor

ELLO, EVERYONE. The specific objective of this lesson is that you should be able to discuss the personal needs that are satisfied through employment. The needs that will be considered are economic, social, psychological and physiological.

I am sure you will agree that most people spend a large percentage of their time at work. It is obvious, therefore, that they must get some amount of satisfaction from their jobs. What constitutes job satisfaction?

Like many, you may respond that a job that pays well is satisfying. You may, therefore, regard the need for money to be the chief need that is satisfied through work. It is true that for many persons the main reward of work is money. However, this factor may not be important to some who may have other dominant factors that make their work satisfying. Often, it is a combination of factors that causes people to work and makes them satisfied with their jobs. We will now consider the main needs that are satisfied through work. These needs may be classified as the rewards of work and ultimately they result in people wanting to work rather than staying at home.

## **ECOMOMIC NEEDS**

Here, we look at the fact that people work to get money so as to be able to sustain themselves. Money is needed for food, clothing, shelter, bill payments, etc. It is also a means of acquiring material possessions and power.

## **SOCIAL NEEDS**

For many, the main reward of work is that it enables them to socialise with their colleagues during, before and after working hours. They often join clubs, societies and other social groups, for example, sports clubs, as a means of fostering the kind of interaction that they desire. Through socialisation, people often learn to do things that they could not do before, and this makes their job satisfying. Through communication at the workplace, many persons are kept "alive".

## **PSYCHOLOGICAL NEEDS**

Work allows many people to exercise their talents and especially if the work is challenging, they will feel proud of the end result. When people achieve their actual potential, they will feel self-fulfilled and the desire to work will be even stronger.

## PHYSIOLOGICAL NEEDS

Here, work is seen as a means of keeping the worker fit and active. Many pensioners continue to work after they have reached the age of retirement for this very reason. Work provides a means of getting rid of boredom and many housewives choose to go out to work for this particular reward.

Now, work on this question related to the information in this lesson.

The production manager of De Valt Beverages Limited observed that some employees never accepted the company's offer to work overtime for twice the rate of normal hours. A few others, however, were always requesting overtime work. Mr Bunker who works in another department donated most of his pay to charity. (a)(i) List three major needs that are satisfied through work. (3 marks)

(ii) For each need listed in (a)(i) above, discuss what management can do to help workers to realise some needs. (6 marks)

(b) Suggest, giving reasons in each case, what needs seem to be critical for:
(i) Employees who always requested overtime work.
(ii) Employees who never accepted overtime work.
(iii) Mr Bunker who donated most of his pay to charity (9 marks)

(c) Indicate the type of incentive that might motivate Mr Bunker to work harder, giving a reason for your answer. (2 marks) Total marks: 20

Which need or needs would cause you to want to work? Think about it. Next week, we will begin section three of the syllabus: establishing a business. Have a good week.

Yvonne Harvey teaches at Glenmuir High School. Send questions and comments to kerry-ann.hepburn@gleanerim.com

## yl:english literature

BERYL CLARKE

E HAVE arrived at scene 3 of act 1 and Cory finally makes his appearance on the stage. It is to be noticed that he does so 'carrying his football equipment'. Even without the discussion that had taken place between his parents, this is enough to show us the importance of his interest in the sport and to raise the question of how he will react if denied the opportunity to pursue his chance. Now that he appears, we are able to observe how he relates to each of his parents. With his mother, he is relaxed and, like in many families, he tells his mother what is happening in his life and relies on her to pass on what information he wants his father to know. I am sure that some of you can relate to this action for many children/ teenagers use this method to soften their fathers; to get their fathers' permission to do something or to agree to allow them to go somewhere. Naturally, the audience is waiting to see what happens between Cory and his father, especially knowing Troy's attitude to his son's involvement in the sport.

Things start quietly even though Troy makes his displeasure known to his son. Cory does not seem worried about his father saying "I ain't but two seconds off you noway", but tries to convince him to buy a TV. Troy reveals aspects of his character in refusing to purchase one.

1. He puts first things first. Troy makes his decision regarding the TV based on the prioritising of their needs and fixing the roof of their house must rank above Cory's request.

2. He does not believe in being indebted.

3. The matter of racial injustice is never far from his mind. When Cory mentions that the Pirates had won again, Troy begins an outburst against the race prejudice which he believes keeps "that Puerto Rican boy" Clemente on the bench and which does not treat coloured players with fairness.

4. He does not want Cory to 'get tied up in them sports because the coloured guy got to be twice as good before he get on the team.'5. Troy's outlook on life is limited by his perception of race relations and thus he limits his son's horizon.

6. He displays no affection to his son in this conversation; that is, he does not embrace him, nor does he say he loves nor likes him, but his sense of responsibility tells us that he does care for him. Troy had not had the example of a good father but he tries to do what he considers as right for Cory.

7. He makes it very plain that he is the boss of the family.

I want you to think of how you would feel if your father or mother prevented you from becoming an athlete with the chance of getting a scholarship to develop your scholastic and athletic ability. Would you willingly accept his/her view? It appears that Cory does not see eye to eye with his father. Obviously, he does not understand or he would not have asked his father why he does not like him. Of importance, too, is the clear difference between father and son that is emerging. They do not understand each other and this situation is worsened by the way the father addresses his son.

Here is where role play can be an asset. Imagine the facial expressions on each face as Cory listens to his father dismissing his interest and hopes as a football player, and later when Troy explains that he provides for him because it is his responsibility. Is there confusion on Cory's face, anger, sadness, perhaps surprise too?

## Fences (part 4)



From left: These champion boys of Waterford High School, Kashayne Walker, Shanon Brown, Jamar Barnes, Courtney Lewis and Kamar Rose take it to their competitors.

There is no doubt that there would have been anger on Troy's face but what else would the audience see? Does the pain of discrimination and disappointment also come through? Do not forget to take their tone of voices into account as you dramatize this scene. I wonder whether Cory continues to work as he asks his father why he does not like him or does he walk over to him and look into his face? If he does, his father would have taken that as a sign of challenge and would not have liked it and his face and gesticulations would also show his reaction.

Let us not overlook the fact that they are building a fence. On the stage there is the half-finished fence, work on which is being used by Troy to try to keep his son at home on Saturdays. It could feature as a

bone of contention, but we have to bear in mind that while Troy talks about finishing it, he does not seem all that anxious to do so. By the way, what is he fencing in? Or could he really intend to fence out something or somebody? Think about this for future discussion. Suffice it to say that working together could have been a source of bonding but the generation gap prevents this and a wedge is seen between them, one that never closes.

I hope that you have found out something about each baseball player who is mentioned. Until our next 'class', walk with God and may He bless you!

Beryl Clarke is an independent contributor. Send questions and comments to kerry-ann.hepburn@gleanerjm.com

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## yl:chemistry

## Calculations on the mole concept

FRANCINE TAYLOR-CAMPBELL



Mike Henry (left), minister of transport and works, examines the photographs taken by 10 young men from Tivoli Gardens in west Kingston. With him are Geneive Brown-Metzger (centre), consul general of Jamaica to New York, and Earl Jarrett, general manager of Jamaica National Building Society (JNBS) and chairman of the JNBS Foundation.

## Contributor

Let us try this question.

1. (a) On complete combustion, 4.0g of a hydrocarbon give 11.0 g of carbon dioxide and 9.0 g of water. What is the formula of the hydrocarbon?

(b) 1.89g of zinc nitrate was heated according to the equation  $2Zn(NO_3)_2(s) == 2ZnO(s) + 4NO_2(g) + O_2(g)$ (i) What is the percentage by mass of oxygen in zinc nitrate? (ii) What volume of oxygen at r.t.p. is given off when 1.89g of zinc nitrate are heated?

## **ANSWERS**

(a)  $M_r$  of  $CO_2 = 12 + (16^2) = 44$  $M_r \text{ of } H_2 0 = (1*2)+16 = 18$ #mol CO<sub>2</sub> = 11 /44 = 0.25 mol #mol H<sub>2</sub>O = 9/18 = 0.5 mol Based on the formula of the hydrocarbon C<sub>x</sub>H<sub>y</sub>. #mol of C = 0.25 mol and #mol of H = 2\*0.5 = 1 mol Ratio of C:H = 0.25: 1 = 1:4 Hydrocarbon is CH<sub>4</sub>

(b)  $2Zn(NO_3)_2 = 2ZnO + 4NO_2 + O_2$ Molar mass of  $Zn(NO_3)_2 = 65 + 14*2 + 16*6 = 189g$ % 0 = mass of oxygen in zinc nitrate = (96/189)\*100 = 50.8% Total mass of zinc nitrate

(ii) 1.89g of  $Zn(NO_3)_2$  represents 1.89/189 = 0.01 mol According to the equation, 2 mol of Zn(NO<sub>3</sub>)<sub>2</sub> gives off 1 mol O<sub>2</sub> Therefore 0.01 mol  $Zn(NO_3)_2$  will produce 0.01/2 = 0.005 mol  $O_2$ At r.t.p. 1 mole of any gas occupies a volume of 24dm<sup>3</sup>  $0.005 \text{ mol } O_2$  has a volume of  $0.005 \times 24 = 0.12 \text{ dm}^3$ 

2. Ammonia and carbon dioxide react to form water and a solid, urea, CON<sub>2</sub>H<sub>4</sub>. In the reaction, 72dm<sup>3</sup> of carbon dioxide at r.t.p. are converted to urea.

(i) Write the equation for the formation of urea. (ii) Calculate the volume of ammonia at r.t.p. which reacted. (iii) Calculate the mass of urea formed.

## **ANSWERS**

(i)  $2NH_3(g) + CO_2(g) == H_2O(I) + CON_2H_4(s)$ (ii) Based on the equation, 2 mol  $NH_3$  react with 1 mol  $CO_2$  (2:1 ratio) Hence, if 72 dm<sup>3</sup> of CO<sub>2</sub> is used then 2 x 72 dm<sup>3</sup> of NH<sub>3</sub> would react. Volume of ammonia = 144dm<sup>3</sup> (iii) 1 mol of gas at r.t.p has a volume of 24dm<sup>3</sup> #mol CO<sub>2</sub> used = 72/24 = 3 mol Using the equation again, 1 mol CO<sub>2</sub> produces 1 mol CON<sub>2</sub>H<sub>4</sub> (urea) Thus, 3 mol CO<sub>2</sub> produces 3 mol urea Molar mass of urea =  $(12 + 16 + 14^{2} + 1^{4}) = 60g$ 3 mol urea has a mass of  $60 \times 3 = 180g$ .

Now, attempt this question. 3. Give the equation for the reaction between methane and steam. Calculate the maximum volume of hydrogen, measured at s.t.p., which can be obtained from 16g of methane.

## **ANSWERS**

(a)  $CH_4(g) + H_2O(g) == CO(g) + 3H_2(g)$ (b)  $M_r$  of  $CH_4 = 12 + (1*4) = 16$ #mol CH<sub>4</sub> = 16/16 = 1 mol Based on reaction, 1 mol of CH<sub>4</sub> produces 3 mol of H<sub>2</sub> gas At s.t.p, 1 mol of any gas =  $22.4 \text{ dm}^{-3}$ Volume of 3 mol  $H_2 = 3*22.4 = 67.2 \text{ dm}^{-3}$ 

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## yl:geography

## **Exam questions** (part 4)

## MARJORIE HENRY

Contributor

N THE previous lesson, I started to discuss question three from the last external examination. In response to part (b) of the question where you were asked to discuss four processes of coastal erosion, two were discussed towards the end of the lesson. Here are the remaining two processes.

## Corrosion/solution:

Some rocks at the coast are especially vulnerable to being dissolved by the sea water. This is particularly true of limestone, which forms cliffs in many parts of the Caribbean. Acids in the water slowly dissolve away the rock, often forming strange jagged rocky platforms.

### Attrition:

Rock fragments carried by the sea frequently knock into each other or are scraped against one another. This causes them to become rounded and smaller.

Let me restate the last sections of the question and then offer an answer to them.

(c)(i) With the aid of a diagram, explain how bay-head beaches are formed.

## Bays and coves between headlands develop bay beaches



SOURCE: GENERAL GEOGRAPHY IN DIAGRAMS - R.B. BUNNETT



Carol Blair (second left), administrative director of Jamaica Cancer Society, hangs out with (from left) artistes, Tessanne Chin, Alaine and Tami Chynn, at Doctors On Stage for Cancer at Jamaica House on Sunday, March 6.

## •••••••

Beaches are constructed when deposition exceeds erosion. On an irregular shore, beaches tend to develop only at the heads of bays. In areas where waves are less destructive than on exposed headlands, the calm waters deposit the sand they are carrying. Such crescent-shape beaches are called bay-head beaches.

(c)(ii) Explain how river cliffs and slip-off slopes are formed at meanders.

In the middle course of the river profile, the gradient is much less than in the upper course. The volume of water increases, with more tributaries joining the main river. More water is also added by through flow and, if the rock is permeable, by groundwater flow.

Lateral erosion takes over from vertical erosion as the most important process. As a result, meanders become larger. The current is fastest and most powerful on the outside of the meander, particularly on the downstream section. Erosion is relatively rapid and the outside (or concave) bank is undercut. Eventually, the bank collapses and retreats, causing the meander to spread further across the valley. If the meander has already reached the side of the valley, erosion on the outside bend may create a very steep slope or river cliff.

The current on the inside (or convex bank) of the meander is much slower. As the river slows, it drops some of its load and deposition occurs. This builds up to form a gently sloping slip-off slope or point bar.

## SOURCES OF REFERENCE

Geography for CSEC - Nelson Thornes Geographic Fundamentals - W. G. Stone et al General Geography In Diagrams - R.B. Bunnett

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## yl:information technology

## Algorithms

## NATALEE A. JOHNSON

Contributor

STUDENTS, IN this week's lesson, we will continue to look at algorithms. Before we do so though, here are the solutions to the defining diagram questions I gave you in the previous lesson.

## Question 1

Difference
Difference

## Question 2

INPUT	PROCESSING	OUTPUT
Length, Width Say L, W	1. Read /accept/get length and width of rectangle	Area Perimeter
	2. Find the Area of the rectangle	
	3. Find the perimeter of the rectangle	
	4. Print Area, Perimeter	

## THE ALGORITHMIC LANGUAGE

When writing algorithms, the language gradually progresses from English towards a notation that resembles that of a programming language. An intermediate notation called pseudo-code is commonly used to express algorithms. A pseudo-code is an imitation computer program written using mathematical notations and English-like statements to describe the logics to solve a problem or carry out a procedure. The pseudo-code is used as a guide to code the solution to the problem in a high level language.

## PARTS OF A PSEUDO-CODE ALGORITHM

A pseudo-code algorithm contains one or more of the following statements:

- O Input Statements
- O Assignment Statements
- Output Statements
- O Control Statements (Sequence, Selection, Repetition)

## DO'S AND DON'TS WHEN WRITING PSEUDO-CODE

You should do the following:

- O Use the assignment symbol (?) in assignment statements instead of the equal sign
- O Use the equal sign for conditional statements (if statements)
- O Use meaningful variable names
- $\ensuremath{\mathbf{O}}$  Use indentation to show the logic and scope of control structures
- O Insert comments to clarify meaning of blocks of code

You should not do the following:

O Use language-specific constructs such as case, switch statements or for loops in the pseudo-code. Constructs such as while, repeat and if-then-else are sufficiently general and can, therefore, be used in the pseudo-code. Keywords such as readIn, writeln, printf, scanf should not be used. These are used for high-level languages.

O Attempt to write Pascal code before writing the algorithm. That is, do not execute the program first and

then try to write the algorithm afterwards, based on the program code. This is a very bad practice and is essentially a waste of time.

## PARTS OF A PSEUDO-CODE ALGORITHM

## Input Statements

The input statement is used to get data from outside the computer from a particular input device into a variable for manipulation by the pseudo-code. The key words we will use for input will be "input" or "read". To read data into a variable, you write the word input or read followed by the variable name.

## This is the way in which it will be written: Read variable\_name

The variable\_name is the name given to the location where the value is to be stored. For example, if I am reading a number into a variable, my variable name would be "num" and the read statement would, therefore, be:

Input key	Read num	Variable
word		name

## **OUTPUT STATEMENTS**

The output statement is used to get information to the programmer or to the user. The key words we will use for output are: "display", "print" and "output". To output information to the user you write the word Print, a statement followed by a variable\_name or the word Print followed by a variable\_name.

This is the way in which it will be written: Print "statement", variable\_name or Print variable\_name

For example, if you were required to read two numbers, find the sum of the numbers and output the sum of the numbers. The output statement would be:



We have come to the end of this lesson. See you next week, when we will continue to look at algorithms. Remember, if you fail to prepare, be prepared to fail.

Natalee A. Johnson teaches at Ardenne High School. Send questions and comments to kerry-ann.hepburn@gleanerjm.com



Culture Club members at Ardenne High School recite the induction pledge during the launch of the Eastern Region's Culture Club Project on Tuesday, March I, at St Andrew Parish Church Hall.

## (part 3) The study of inheritance

## MONACIA WILLIAMS

ELLO, STUDENTS. How are you this week? I hope all is well and that you are keeping up with the lessons. You need to remember that studying genetics is like drinking soup. You drink and you feel full, but 30 minutes afterwards, you are hungry again. This means you will read the genetics and feel that you know it but if you leave it for awhile then try to do a question, you will find that you have forgotten most of what you've learnt. The key to remembering is to practise answering genetics questions over and over again; you cannot do this too often. This week, we are going to look at how characteristics are inherited in organisms from one generation to the next.

## **PATTERNS OF INHERITANCE**

One cannot look at inheritance patterns without mentioning the work of Gregor Mendel, the Austrian monk and teacher. Mendel had a characteristic that many of us lack today, an inquisitive mind. He noticed things around him and wanted to find out why. His curiosity led him to discover how certain characteristics were passed on from one generation of sweet pea to the next. I invite you to become curious and read the full story of Mendel and his work. I assure you that you will find it interesting.

In his experiment, Mendel found that the characteristics he was studying were passed on independently of each other. For example, the seeds of the sweet pea were green or yellow, wrinkled or smooth; the flowers were either purple or white. The fact that these characteristics were inherited in this manner suggests that they are controlled by single genes.

Why would we think this? Remember our first two lessons? Each gene has two alleles and these alleles can either be the same or different. In the case of the colour of the seed, there would be one gene for seed colour. This gene has two alleles, one for green colour and one for yellow colour. These two alleles would be found at the same position on homologous chromosomes. Remember also that one of these alleles would be dominant and the other recessive, and that if two dominant or dominant and recessive alleles come together, then the dominant characteristic is expressed in the phenotype.

## EXAMPLE

Let us say that the dominant colour in the pea is yellow and the recessive is green. This means there will be a gene with two alleles for seed colour at the same position on homologous chromosomes within the nucleus. In genetics, we use the upper case of the first letter of the dominant characteristic to represent the allele so, in the case where the colour yellow is dominant, we will use the letter Y to represent the dominant allele and the lower case y to represent the recessive allele. Remember that alleles can come together in any of the following combinations:

- O Homozygous dominant two dominant alleles together YY
- O Heterozygous dominant one dominant and one recessive allele together -Yy
- O Homozygous recessive two recessive alleles together yy.

Let us now look at how these characteristics, green and yellow colour would be inherited.

### EXAMPLE

There are two pea plants; one produces pea pods with yellow seeds and the other pea pods with green seeds. Pollen was transferred from the anther of one plant to the stigma of the other. Seeds produced were collected and their colour was noted. The original two plants are the parent plants, the pollen and the egg are the gametes and the plants produced from this cross represent the F1 offspring.

In order to show this we will create a genetic diagram using a Punnett Square. The Punnett Square is set out as shown below. The first thing to note is that the genotype (remember that word) of the yellow seeded plant can be either YY or Yy, homozygous dominant or heterozygous dominant, and the green plant can only be homozygous recessive. We will first do the cross with the homozygous dominant plant. (See diagram)

Notice that all genotypes are Yy, hence all are heterozygous dominant. Do you remember the word phenotype? Yes, it describes the appearance of the characteristic and in this instance all the plants would have yellow seeds. Notice also that the recessive allele is present but it does not influence the colour of the seed. The fact that it is not expressed does not mean that it is gone. Remember, it is still present in the genotype!

Next week, we will look at what happens when we cross the heterozygous dominant with the homozygous recessive. Will the results be the same? We will see!

Monacia Williams teaches at Glenmuir High School. Send questions and comments to kerry-ann.hepburn@gleanerjm.com



Earl Jarrett (centre), general manager of the Jamaica National Building Society (JNBS) and chairman of the JNBS Foundation, shows a photo album with images from the Resolution Project to Geneive Brown-Metzger (second left), consul general of Jamaica to New York, and members of the Tivoli Resolution Project implementation team (from left) Rozi Chung, art therapist; Dr Tammy Haynes Robinson, clinical psychologist and Max Earle, photographer.



## yl:mathematics Length of a vector

## CLEMENT RADCLIFFE

Contributor

At the outset, let us review the homework given last week. Home Work

## The diagram below shows vector **b** and vector **c**.

Express in the form

### (i) <u>b</u> (ii) $\underline{c}$ (iii) $\underline{c} + \underline{b}$ (iv) <u>c</u> - <u>b</u>

### Solution



We will now continue Vectors by reviewing LENGTH OF A VECTOR

LENGTH OF VECTOR ON CARTESIAN DIAGRAM The vector  $\overrightarrow{AB} = \begin{bmatrix} 2\\ 3 \end{bmatrix}$  may be illustrated on the CARTESIAN DIAGRAM as follows

## As ACB is a right angled triangle then using Pythagoras' Theorem $AB^2 = AB^2 + CB^2$ $\therefore \mathbf{AB}^2 = 2^2 + 3^2 = 4 + 9$ $\therefore \mathbf{AB}^2 = \sqrt{13}$

It follows that for 
$$\overrightarrow{AB} = \begin{bmatrix} x \\ y \end{bmatrix}$$
, then the length of  $AB^2 = x^2 + y^2$ 

While the aspects of vectors presented above are relatively simple the points noted are sometimes missed by students to their detriment. Please note them well.

## PRACTICE EXAMPLE



In the diagram above, A and B are points such that  $\overrightarrow{OA} = \underline{a}$  and  $\overrightarrow{OB} = \underline{b}$ . The point F (not shown) is such that  $OP = \frac{1}{2} \underline{a} + \underline{b}$ ,

Write  $\overrightarrow{OP}$  in the form  $\begin{pmatrix} x \\ y \end{pmatrix}$ (i)

- Determine the length of OP (ii)

## SOLUTION

(i) From the diagram, the coordinates of A = (6, 8) and B = (5, 11)It was illustrated in last week's lesson that if the coordinates of A is (6, 8), then the

position vector $\overrightarrow{OP} = \begin{bmatrix} 6\\ 8 \end{bmatrix}$		
$\therefore \text{ position vectors} \\ \underline{a} = \begin{bmatrix} 6\\ 8 \end{bmatrix} \text{ and } b = \begin{bmatrix} 5\\ 11 \end{bmatrix}$		
Since $\overrightarrow{OP} = \frac{1}{2} \underline{a} + \underline{b}$		
then $\frac{1}{2} \begin{pmatrix} 6\\8 \end{pmatrix} + \begin{pmatrix} 5\\11 \end{pmatrix} = \begin{pmatrix} 3\\4 \end{pmatrix}$	+	$\left(\begin{array}{c}5\\11\end{array}\right) = \left(\begin{array}{c}8\\15\end{array}\right)$
$\therefore \overline{OP} = \left( \begin{array}{c} 8 \\ \end{array} \right)$		

15 I do hope that you realize that the coordinates of the point P are (8, 15).

Using the formula for length-: (ii)

 $= x^{2} + y^{2}$  [Using Pythagoras' theorem] = 8<sup>2</sup> + 15<sup>2</sup> = 64 + 225 = 289 ∴ length of OP =  $\sqrt{289} = 17$ OP

I do hope that you had no difficulty in understanding the above. If this is the case, let us attempt another example



(i)  $\underline{b} = \begin{bmatrix} 3 \end{bmatrix}$ 

(iv) ) <u>b</u> - <u>c</u> =

5 -2

 $\begin{bmatrix} 5\\-2 \end{bmatrix}$ 

 $= \left(\begin{array}{c} 3 & -5 \\ 4 & -2 \end{array}\right) = \left[\begin{array}{c} -2 \\ 6 \end{array}\right]$ 

(ii) <u>c</u> =



The coordinates of A and B respectively are (3, 4) and (2, -1). (i)

$$\therefore$$
 the position vectors are  $\overrightarrow{OA} = \begin{bmatrix} 3 \\ 4 \end{bmatrix}$  and  $\overrightarrow{OB} \begin{bmatrix} 2 \\ 1 \end{bmatrix}$ 

Note that the coordinates of A and B were used to determine the position vectors OA and OB. You could also have read off the components directly from the graph. In this case joining OA and OB should make it easier.

(ii) (a) Given that 
$$\overrightarrow{OA} = \begin{bmatrix} 3\\ 4 \end{bmatrix}$$
 then  $\overrightarrow{3}$   $\overrightarrow{OA} = \begin{bmatrix} 9\\ 12 \end{bmatrix}$   
(b) Given that  $\overrightarrow{OB} = \begin{bmatrix} 2\\ -1 \end{bmatrix}$  then  $-2\overrightarrow{OB} = \begin{bmatrix} -4\\ 2 \end{bmatrix}$   
(c)  $\overrightarrow{3OA} - \overrightarrow{2OB} = \begin{bmatrix} 9\\ 12 \end{bmatrix} + \begin{bmatrix} -4\\ 2 \end{bmatrix}$   
(c)  $\overrightarrow{3OA} - \overrightarrow{2OB} = \begin{bmatrix} 9\\ 12 \end{bmatrix} + \begin{bmatrix} -4\\ 2 \end{bmatrix}$ 

Answer is  $\begin{bmatrix} 5\\14 \end{bmatrix}$ 

- The hence in the question indicates that the answers in (a) and (b) should be used to solve the part (c). While other methods may be used, the method you are directed to use is usually the simplest approach. Always obey the instructions.
- A common error is to subtract the two vectors found above, instead of adding. This is justified as follows:

$$3OA - 2OB = 3OA + (-2OB)$$
  
You therefore add both answers.

(ii) Since 
$$\overrightarrow{OA} + \overrightarrow{OB} = \underline{c}$$
  
 $\therefore \underline{c} = \begin{bmatrix} 3\\ 4 \end{bmatrix} + \begin{bmatrix} 2\\ -1 \end{bmatrix} = \begin{bmatrix} 4\\ 3\\ 3 \end{bmatrix}$ 

As  $|\underline{c}|$  is the length of vector  $\underline{c}$ ,

then  $|\underline{c}| = \sqrt{5^2 + 3^2} = \sqrt{25 + 9} = \sqrt{34}$ **Answer** : √34

I wish you a productive week as you continue to review Vectors. Next week we will begin the review of Matrices

Clement Radcliffe is an independent contributor. Send questions and comments to kerry-ann.hepburn@gleanerjm.com