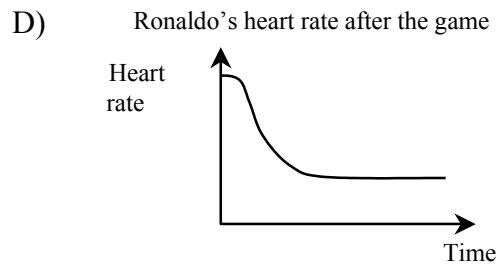
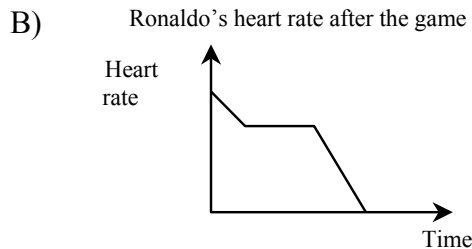
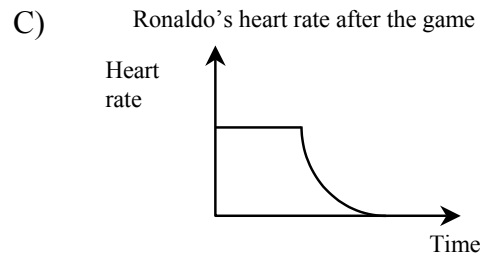
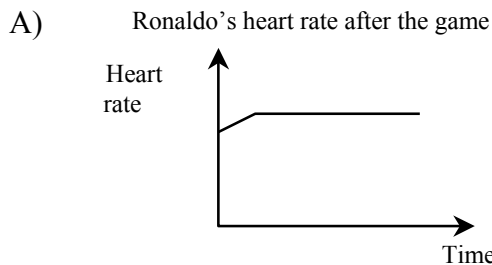


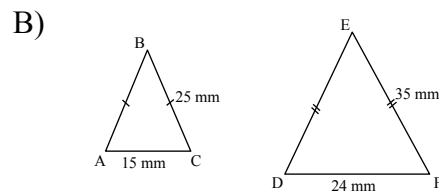
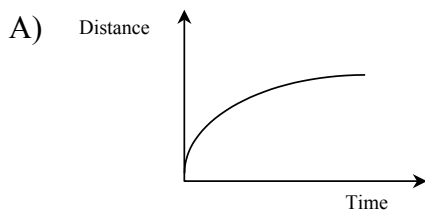
## REVIEW QUESTIONS #3

❶ Immediately after a soccer game, Ronaldo's heart rate was high. It started to drop quickly and then settled at his normal rate. Which of the following graphs represents his heart rate after the game?



❷ David earns \$100 for working 8 hours. Who earns the highest hourly rate of pay?  
 Sheila earns twice as much money as David does for working the same number of hours.  
 Greg earns the same amount of money as David for working twice as many hours.  
 Chris earns twice as much money as David for working twice as many hours.

❸ Which of the following represents a proportional situation? Explain why it is proportional.



C) The number of apples on a tree in relation to its height.

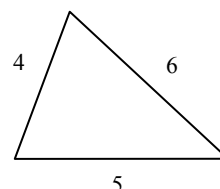
D)

|                   |       |    |       |
|-------------------|-------|----|-------|
| Number of tickets | 3     | 4  | 7     |
| Total cost (\$)   | 13.50 | 18 | 31.50 |

④ Mr. Stevens has won \$1000. He decides to donate the money to UNICEF, the Children's Hospital, and the Cancer Foundation. He gives the Children's Hospital twice as much money as he gives to UNICEF. He gives the Cancer Foundation \$200 more than the amount he gives to the Children's Hospital. How much does he give to each charity?

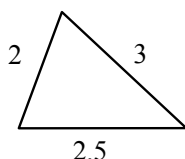
⑤ A regular hexagon with a side length of  $(a - 2)$  cm undergoes a similarity transformation (dilatation) with a scale factor of 3. What is the perimeter of the enlarged regular hexagon?

⑥ Which of the triangles below is NOT similar to the triangle at the right?

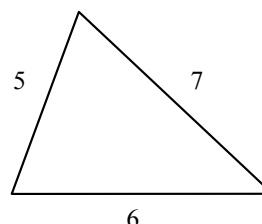


(Note: The figures are not drawn to scale)

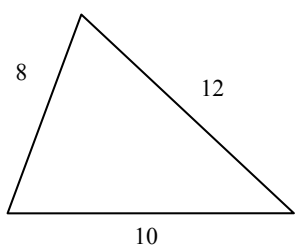
A)



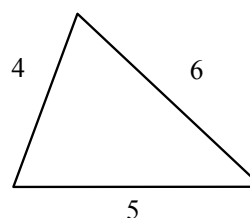
C)



B)



D)



⑦ A fair 6-sided die is tossed. Which of the following are complementary events?

|    |   |    |  |
|----|---|----|--|
| A) | Tossing an even number<br>Tossing an odd number                 | C) | Tossing a multiple of 2<br>Tossing a multiple of 4 |
| B) | Tossing a number less than 4<br>Tossing a number greater than 4 | D) | Tossing a 1 or a 2<br>Tossing a 5 or a 6           |

⑧ Joe and Daniel are the coolest D.J.s to have at a high school dance. They teach the crowd their hip-hop dance moves. Joe knows 4 less than twice as many hip-hop dance moves as Daniel. Complete the following table of values to represent the given situation.

|                                  |   |   |    |             |
|----------------------------------|---|---|----|-------------|
| Number of hip hop moves (Daniel) | 5 | 8 |    | <i>rule</i> |
| Number of hip hop moves (Joe)    | 6 |   | 26 |             |

⑨ a) Simplify

$$3(4x + 2) - (2x + 7)$$

b) Solve

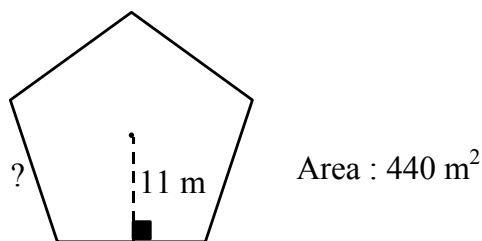
$$5x + 4 - 8x = 7x - 12$$

⑩ Rylee bought a T-shirt while on vacation. The T-shirt was on sale at 25% off the regular price of \$15.99. The sales tax was 5%. What total amount did Rylee pay for the T-shirt?

⑪ A cook, Henri, is making salad dressing for a large wedding party. He uses a 1 : 4 ratio of vinegar to oil. Henri pours 2 cups of vinegar and 8 cups of oil into a large bowl.

Henri's assistant, Jessica, knows that more salad dressing is needed. Jessica pours 3 cups of vinegar into the large bowl. Exactly how much oil must Jessica pour into the mixture to keep the ratio of vinegar to oil at 1 : 4?

⑫ The floor area of a room has the shape of a regular pentagon, as shown below. Its area is  $440 \text{ m}^2$  and its apothem is 11 m. What is the length of one side of the floor?



**1 3** Jane ate a very large slice of pizza. The central angle of the slice was  $80^\circ$ . The diameter of the pizza was 60 cm. What was the area of the slice of pizza that Jane ate?

**1 4** A teacher has a class of 26 students: 14 girls and 12 boys. The teacher has two prizes to give away and decides to put all the students' names into a bowl. The teacher will then draw 2 names. The name of the first winner is not put back into the bowl for the second draw. What is the probability that both prizes will be won by boys?

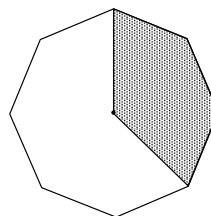
**1 5** On his first typing test, Kyle typed 120 words in 5 minutes. Since then, he has been practicing and his typing rate has increased by 25%. How many words can Kyle type in 12 minutes at his new rate?

**1 6** At the MacDonald Aircraft Company, engineers make up 30% of all the employees. The ratio of left-handed to right-handed engineers is 1 : 4. There are 60 right-handed engineers in the company. How many employees are there in the company?

**1 7** Rachel worked as a lifeguard at a hotel pool for three summers in a row. In 2001, she worked 4 weeks more than she did in 2000. In 2002, she worked 2 weeks less than the sum of the weeks she had worked in 2000 and 2001. During these three summers, she worked a total of 30 weeks. How many weeks did she work in 2002?

**1 8** The area of the shaded part of the regular octagon on the right is  $(5x - 7) \text{ cm}^2$ .

The area of the whole octagon is  $44 \text{ cm}^2$ .  
What is the value of  $x$ ?



**19** The home football team can win the championship only if all three of the following conditions are met:

- The quarterback is healthy.
- The visiting team's running back plays badly.
- It does not rain on the day of the game.

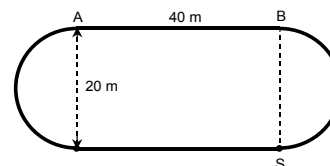
There is an 80% chance that the quarterback will be healthy.

The visiting team's running back played badly **seven** times in the 10-game season.

There is a 25% probability of rain on the day of the game.

What is the probability of the home team winning the championship?

**20** A sports field is in the shape of a rectangle with 2 semicircles. A running track, shown in bold on the diagram, surrounds this field.

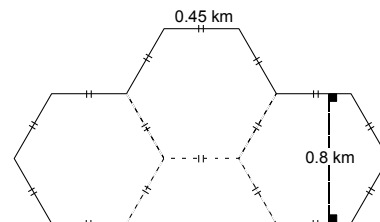


The diameter of each semicircle is 20 m. The distance from A to B is 40 m.

A runner starts from point S and runs 80% of the track. What is the distance covered by the runner?

**21** The City of Gatineau has just built a new park. Its shape and dimensions are shown in the diagram.

James mows the grass for all Gatineau parks.



It takes him 2 hours to mow an area of  $1.5 \text{ km}^2$ . How long will it take him to mow the grass at this new park?