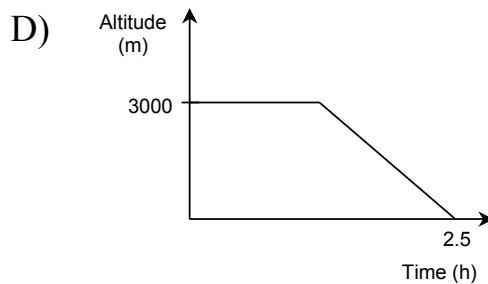
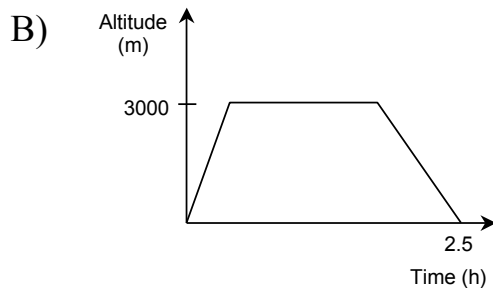
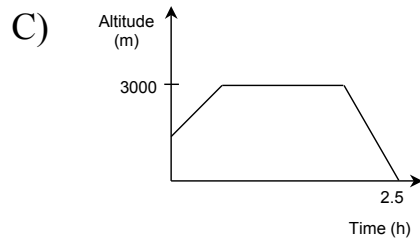
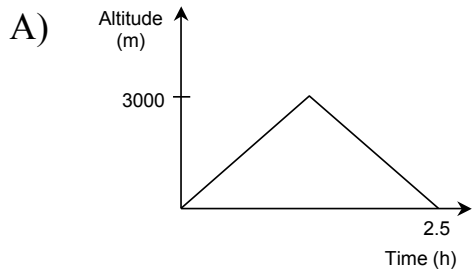


## REVIEW QUESTIONS #4



① An airplane departs from P.E. Trudeau Airport, reaching an altitude of 3000 metres. After remaining at a constant altitude for a period, it lands in Winnipeg 2 h 30 min later.

Which of the following graphs represents the altitude of the plane in relation to time?  
(Note: Graphs are not drawn to scale. Assume that both cities are at an altitude of 0 metres.)



② Three friends collect CDs.  
All together they have 120 CDs.

Jacob has 3 times the number of CDs that Maria has. Trevor has twice the number that Maria has. Let  $x$  represent Maria's CDs. How many CDs does each friend have?



③ Simplify this algebraic expression.  $3x - 4x - 5 + 6x - 3x - 3$

④ A dentist questioned four high school students to find out how many times they flossed their teeth within a given number of days. Which student had the highest flossing rate?

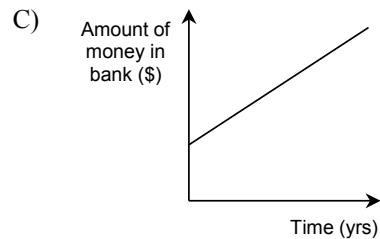


- A) Ian flossed 52 times in 60 days.
- B) Anne-Marie flossed 29 times in 35 days.
- C) Janice flossed 71 times in 84 days.
- D) Ed flossed 17 times in 20 days.

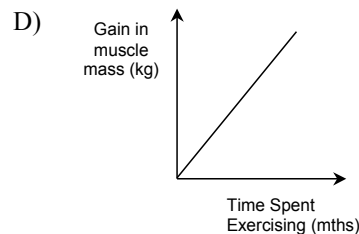
⑤ Which of the following represents a proportional situation? Explain why it is a proportional situation.

A)

$x$	0	2	7	17
$y$	0	6	21	31



- B) Kwame put his dog outside for one hour and it barked five times.



Explanation:

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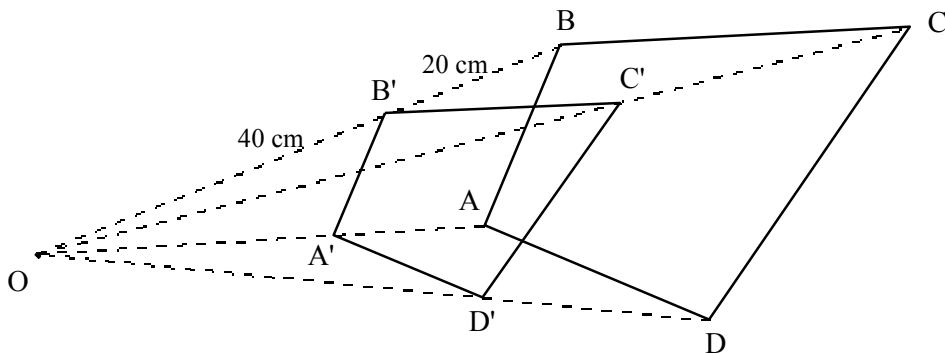


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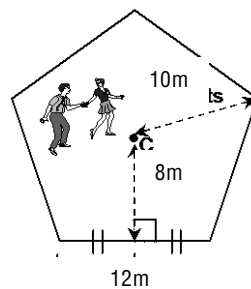


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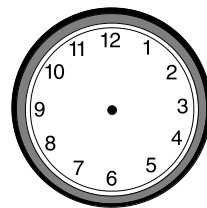
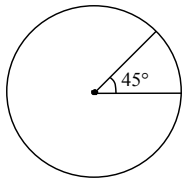
⑥ In the figure below, quadrilateral  $A'B'C'D'$  is the image of  $ABCD$  resulting from a similarity transformation with center  $O$ . The measures are given in cm. What is the ratio of similarity?



⑦ A dance floor is in the shape of a regular pentagon. The apothem is 8 m and the length of one side of the pentagon is 12 m. Point  $C$  indicates the center of the regular pentagon. What is the area of the dance floor?

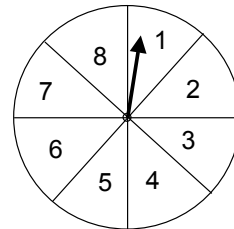


⑧ The face of the clock at right is circular in shape. A sector of the clock's face is represented below. The sector has a central angle of  $45^\circ$ . The area of the sector is  $100 \text{ cm}^2$ .



What is the area of the face of the clock?

⑨ When Peter will spin the wheel shown on the right, what is the probability that he will spin a PRIME #?



⑩ A piggy bank contains 10 quarters, 15 dimes and 3 nickels. What is the probability of removing 2 consecutive quarters without replacing the first quarter?



①① Complete the bill of sale shown below.

ABC Discounts		
Description	Cost per Item	Total Cost
2 Shirts	\$26.00	\$52.00
3 Pairs of socks	\$4.00	\$12.00
1 Pair of shoes	\$75.00	\$75.00
COST OF ITEMS		\$139.00
40% DISCOUNT		\$ _____
COST AFTER DISCOUNT		\$ _____
TAX [GST]		\$ _____
TAX [PST]		\$ _____
YOU PAY ONLY		\$ _____

①② Maria has ingredients for 8 pancakes: 2 eggs, 100 mL milk & 100 mL flour  
In the table below, write the ingredients for 100 pancakes.

Ingredients for 100 Pancakes	
	eggs
	mL milk
	mL flour

①③ It takes Shawna 25 minutes to walk 2.5 km to school. Daniel walks at the same speed as Shawna. How many minutes will it take Daniel to walk 4 km to school?

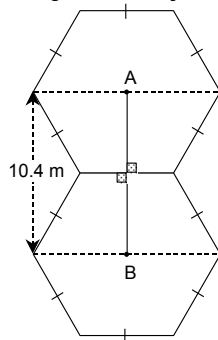
①④ You missed the bus on the morning of your math exam, so you called for a taxi. When you get into the taxi, the meter starts at \$5.00. You will be charged \$1.30 per kilometer travelled. The distance from your home to school is 12 kilometers and you have been given \$20.00. Will the \$20.00 cover the cost of the taxi ride to school? Explain.

①⑤ Simplify:  $\frac{4(6x - 3) + 2x}{2}$

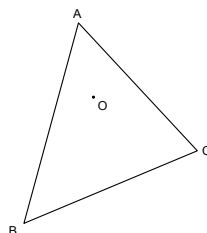
①⑥ Find the value of the following algebraic expression given:  $a = 5.5$ ,  $b = -2$ ,  $c = -4$   
 $2a + b^2 + 5c$ .

①⑦ Solve: ①  $3(2x) + 5 - x = 2x + 17$                       ②  $\frac{x - 12}{2} = \frac{x}{3}$

①⑧ Two regular hexagons that are attached along one side, as shown below, have centers at A and B. The length of segment AB is 10.4 m. The area of each hexagon is  $93.6 \text{ m}^2$ . What is the length of any one side?



①⑨ Draw and label the image of  $\triangle ABC$  using the similarity transformation with center O and a ratio of  $\frac{3}{2}$ .



**20** The school cafeteria offers:

3 choices of main dishes:                      Hamburger, Pizza and Chicken  
3 choices of desserts:                          Apple Pie, Ice Cream and Yogurt  
3 choices of drinks:                              Juice, Water and Milk

A student randomly chooses a meal consisting of one main dish, one dessert and one drink.

**What is the probability that the student's meal will consist of a hamburger, ice cream and water?**

**21** A bag contains 26 cards. Each card shows a letter and a number. The chart below shows the pattern used to assign a number to a letter.

Letter	A	B	C	...
Assigned no.	1	2	3	...

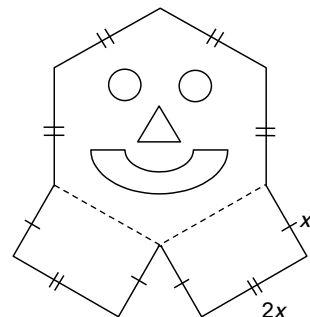
The letters A, E, I, O, U and Y are vowels. The remaining 20 letters are consonants.

**What is the probability that the number assigned to a consonant will be an odd number?**

**22** The design below is a logo located on the outside of a new skateboard factory. In part, it has been designed using a regular hexagon and two congruent rectangles.

The perimeter of each rectangle is 48 m. The length of each rectangle is twice its width.

A border is going to be put around the exterior (perimeter) of the logo. The border costs \$4.00 per meter. What is the total cost of installing the border?



**23** Sally wants to buy 25 dozen doughnuts for the school bake sale.

The *Circle Bakery* sells 1 dozen doughnuts for \$4.20.

The *Doughnut Dream* sells 15 doughnuts for \$4.50.



How much will Sally save if she buys the doughnuts from the store that gives her the better price?

**24** A piece of land valued at \$100 000 was broken into smaller lots of equal value.

Ms. McLeod purchased  $\frac{3}{5}$  of the land and paid the corresponding amount. She left a deposit of \$5000 and financed the rest at her bank. The interest rate was 4% per year. What amount of interest did she pay for 1 year?

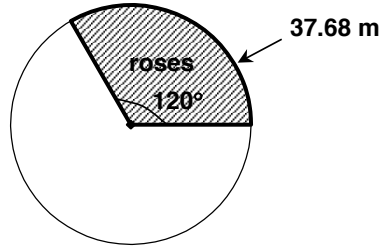
**25** On Monday, a group of friends went biking. On Tuesday, they biked 5 km more than three times the distance they had biked on Monday. They also went biking on Wednesday and travelled twice the distance they had travelled on Tuesday. The group knows that they covered a total of 105 km during the three days. How many kilometers did they bike on Tuesday?



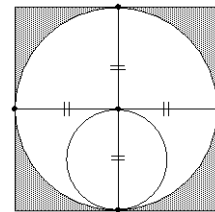
**26** Mr. Cheung has a circular garden. He wanted to set aside a **sector** of the circular garden for his roses. Mr. Cheung measured a **central angle** of  $120^\circ$  to create this sector. The **arc length** of the sector is 37.68 m.



What is the area of the sector in which Mr. Cheung planted his roses?



**27** A small circle with an area of  $28.26 \text{ cm}^2$  is located inside the large circle shown on the right. The larger circle is inscribed inside a square. What is the area of the shaded region?



**28** The diagram below is a design of a cloth flower. The interior of this design is composed of a regular octagon, with sides measuring 9 cm. Surrounding the octagon are 8 arcs. These arcs are part of congruent circles. The centers of the circles are located at the vertices of the octagon. Lace must be put around all the arcs. How many cm of lace must be purchased?

