

ANSWER KEY
Grade 8 Mathematics
Western School District
June 2010



Section A:

1.	B
2.	B
3.	A
4.	C
5.	C

6.	D
7.	B
8.	D
9.	A
10.	B

Section A: Constructed Response [10 Marks]

Write your answers in the space provided, and show all workings to achieve full marks.

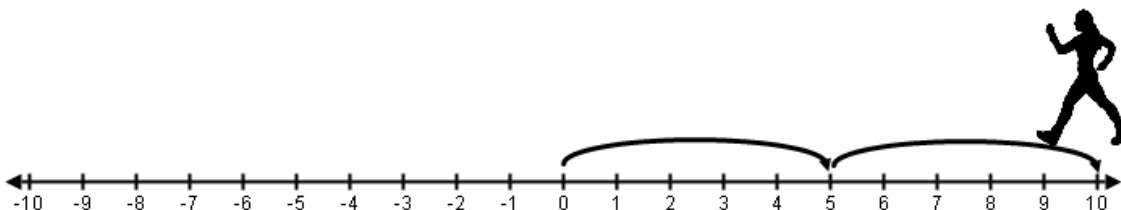
1. Sketch a model (ie, Number line, Bank Model, etc) to calculate:

$$(+10) \div (-5)$$

[3 Marks]

Methods Will Vary: Sample solution using number line:

How many steps of -5 make $+10$? Since the step size is negative, you must walk backward 2 steps. Since you are facing the negative end of the line, the answer is -2 .



The answer alone should not receive full marks.

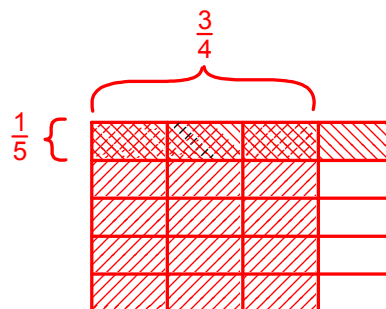
2. Sketch a model (i.e., Area Model, Number line, etc.) to calculate:

$$\frac{3}{4} \times \frac{1}{5}$$

[3 Marks]

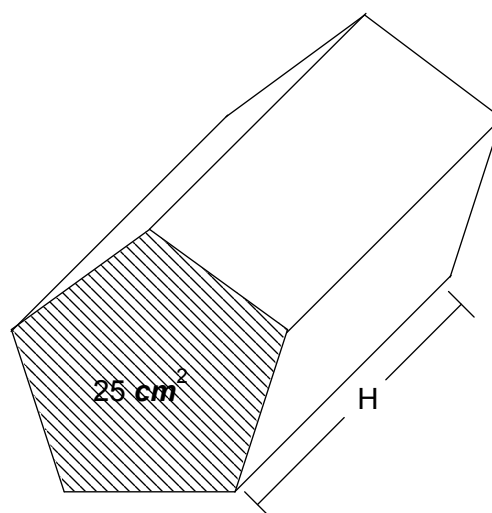
Methods will Vary

Sample solution using Area model:
Area shaded twice $\frac{3}{20}$



3. The volume of the following right pentagonal prism is 100 cm^3 . If the area of the base is 25 cm^2 , what is the height of the object? [1 Mark]

$100 \text{ cm}^3 \div 25 \text{ cm}^2 = 4 \text{ cm}$



4. A sample of coins from a piggy bank is shown:



- A. The picture represents the ratio of all the coins in the bank. If there are 60 coins in the bank, how many are nickels? [2 Marks]

$$\frac{1}{10} = \frac{x}{60}$$

There are 6 Nickels in the bank.

- B. What is the ratio of toonies to quarters? [1 Mark]

3 : 2



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Section B: Calculator

11.	D
12.	B
13.	D
14.	D
15.	B
16.	C
17.	D
18.	B
19.	A
20.	C

21.	A
22.	C
23.	C
24.	A
25.	B
26.	A
27.	C
28.	C
29.	C
30.	C

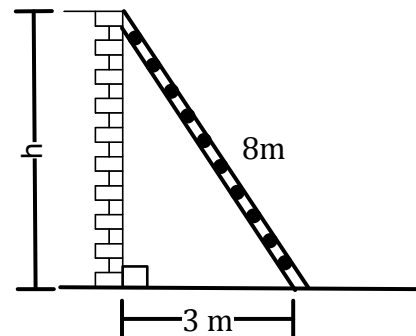
31.	C
32.	C
33.	A
34.	C
35.	A
36.	A
37.	C
38.	D
39.	B
40.	A

Section B: Constructed Response [30 Marks]

Write your answers in the spaces provided, and show all workings to achieve full marks.

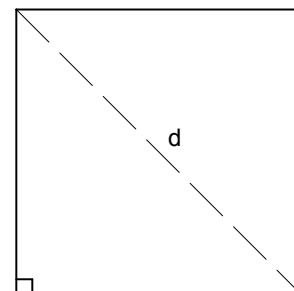
5. A ladder is leaning against a wall. How high up the wall does the ladder reach?
Express your answer to one decimal place. [3 Marks]

$$\begin{aligned} \text{Leg}^2 &= \text{Hypotenuse}^2 - \text{Leg}^2 \\ \text{Leg}^2 &= 8^2 - 3^2 \\ \text{Leg}^2 &= 64 - 9 \\ \text{Leg}^2 &= 55 \\ \text{Leg} &= \sqrt{55} \\ \text{Leg} &= 7.4 \text{ m} \end{aligned}$$



6. The area of the square shown is 625 cm^2 . What is the length of the diagonal?
Express your answer to one decimal place. [3 Marks]

$$\begin{aligned} s &= \sqrt{625} \\ s &= 25 \text{ cm} \\ \text{Hypotenuse}^2 &= \text{Leg}^2 + \text{Leg}^2 \\ \text{Hypotenuse}^2 &= 25^2 + 25^2 \\ \text{Hypotenuse}^2 &= 625 + 625 \\ \text{Hypotenuse}^2 &= 1250 \\ \text{Hypotenuse} &= \sqrt{1250} \\ \text{Hypotenuse} &= 35.4 \text{ cm} \end{aligned}$$



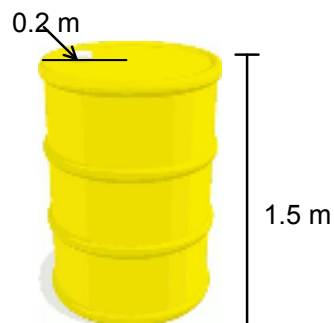
7. Evaluate. Show all workings [3 Marks]

$$\begin{aligned} &\left(\frac{5}{6} - \frac{2}{3}\right) \div \left(\frac{1}{2} + \frac{3}{4}\right) \\ &= \left(\frac{5}{6} - \frac{4}{6}\right) \div \left(\frac{2}{4} + \frac{3}{4}\right) \\ &= \left(\frac{1}{6}\right) \div \left(\frac{5}{4}\right) \\ &= \left(\frac{1}{6}\right) \times \left(\frac{4}{5}\right) \\ &= \left(\frac{4}{30}\right) \text{ or } \left(\frac{2}{15}\right) \end{aligned}$$

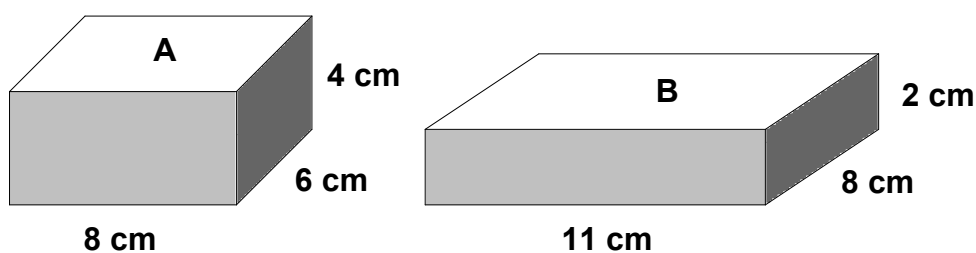
Note: Do not penalize students if answer isn't reduced to lowest terms.

8. Chris is painting a barrel that is 1.5 m high and 0.2 m in radius. Including the top and bottom, what area will the paint have to cover? Show your work. [3 Marks]

$$\begin{aligned} \text{SA of Barrel} &= 2\pi r^2 + 2\pi rh \\ \text{SA of Barrel} &= 2 \times 3.14 \times 0.2^2 + \\ & 2 \times 3.14 \times 0.2 \times 1.5 \\ \text{SA of Barrel} &= 0.2512 + 1.884 \\ \text{SA of Barrel} &= 2.1352 \text{ m}^2 \end{aligned}$$



9. Sean needs to buy nails for his carpentry project. The hardware store sells these full boxes of nails for the same price. Which one should he buy? Justify your answer. [3 Marks]



$$\text{Volume Box A} = 8 \times 6 \times 4$$

$$= 192 \text{ cm}^3$$

$$\text{Volume Box B} = 11 \times 8 \times 2$$

$$= 176 \text{ cm}^3$$

Box A because it is bigger, therefore contains more nails.

10. A Ford F-150 burns fuel at a rate of 0.113 litres per kilometre driven.

- A. If a person travelled a total distance of 200km, how many litres of fuel were burned? [1 Marks]

$$0.113 \text{ l/km} \times 200 \text{ km} = 22.6 \text{ litres}$$

- B. If the price of fuel was \$1.10 per litre how much did the trip cost in dollars? [1 Marks]

$$22.6 \text{ litres} \times \$1.10 = \$24.86$$

Note: A student gets the wrong answer in part A but still correctly use the answer in Part B still deserves full credit for part B.

11. A video store offers the following choices:

CHOICE A: 25% off each DVD with a regular price of \$20.00

CHOICE B: Buy 3 DVD's for a total of \$40.00

Which deal gives the better price for one DVD? Justify your answer. [2 Marks]

Choice A

$\$20.00 \times 0.25 = \5.00

$\$20.00 - \$5.00 = \$15.00$

Choice B

$\$40.00 \div 3 = \13.33

Better Deal!!!

12. Solve the equation. Show your workings.

$$3(x - 2) = 12$$

[2 Marks]

Methods Will Vary

Algebraically: $3x - 6 = 12$

$3x - 6 + 6 = 12 + 6$

$3x = 18$

$\frac{3x}{3} = \frac{18}{3}$

$x = 6$

13. Bell Express Vu charges a basic monthly rate of \$20.00 and \$5.00 for each pay-per-view movie. This can be described by the equation $C = 5m + 20$.

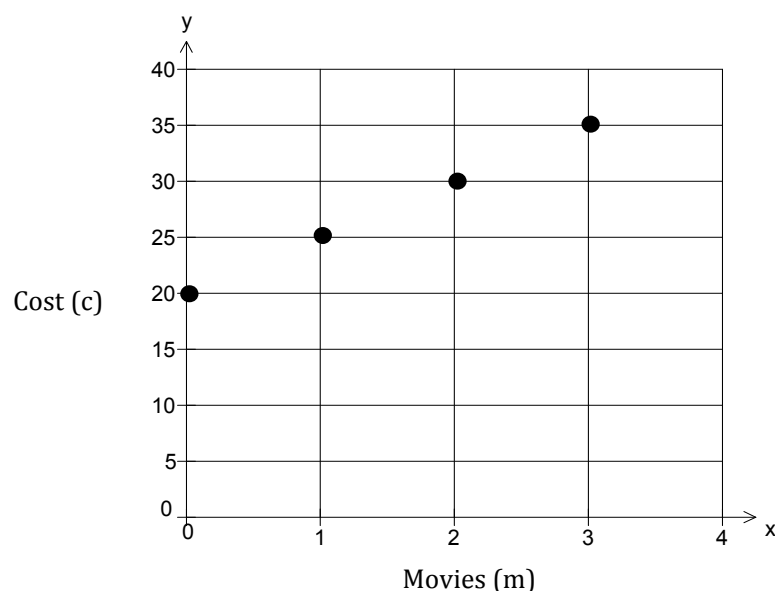
- A. Determine the cost of viewing pay-per-view movies by completing the table.

[1 Mark]

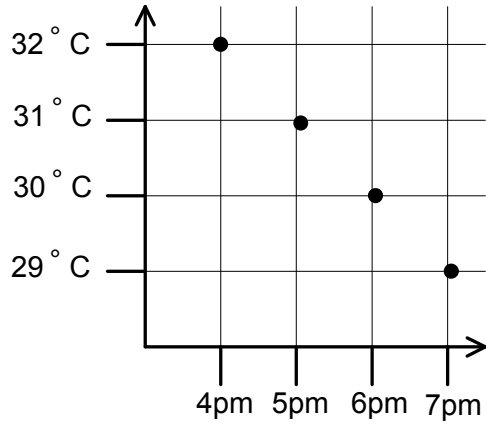
Movies (m)	Cost (c)
0	20
1	25
2	30
3	35

- B. Create a graph using the data in the table of values.

[1 Mark]



14. The graph shown gives the temperature at Puerto Vallarta in Mexico.



A. What is misleading about the graph? [1 Mark]

It appears to show that the temperature dropped greatly over the 3 hour period.

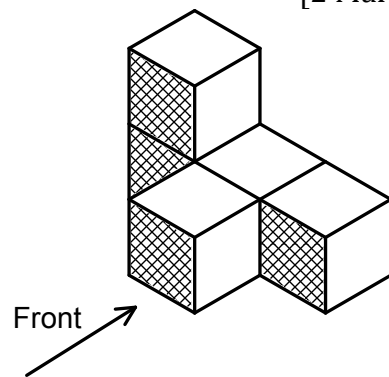
B. How can the graph be changed to represent the data accurately?

Start the temperature scale at 0°C.

[1 Mark]

15. Sketch and label the front, top, left side and right side views of the object.

[2 Marks]

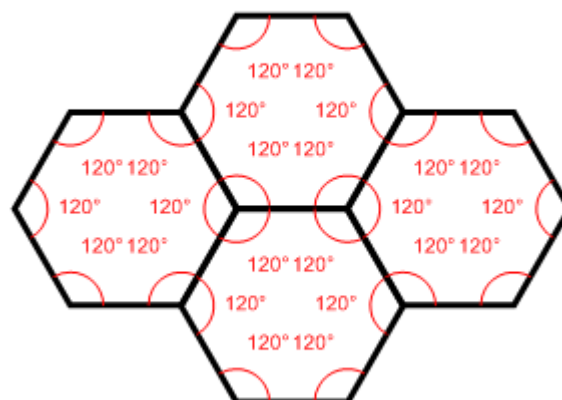
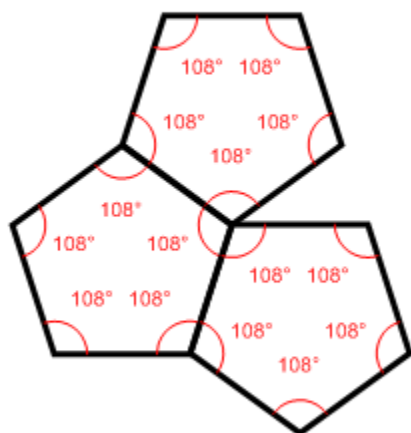
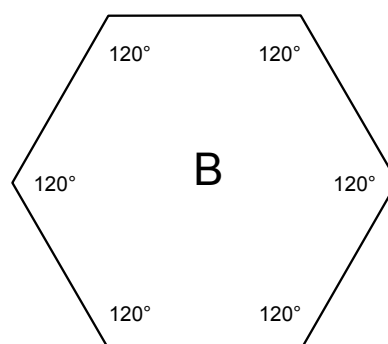
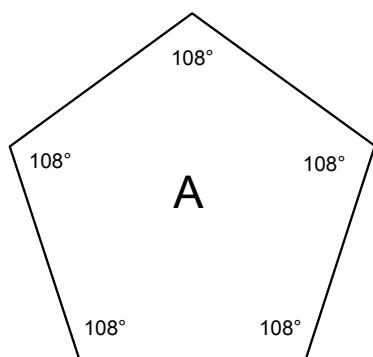


Top

Left Front Right

16. Explain why only one of these will tessellate and the other will not.

[3 Marks]



In order for a shape to tessellate the angles around any vertex must add up to 360° . Since the interior angles of a regular pentagon are 108° it is impossible to add up to 360° . However, the interior angles of a regular hexagon are 120° and 3 of these added together will form 360° . Hence, a regular pentagon will not tessellate and a regular hexagon will.