MULTIPLE CHOICE:

1. The value of $\frac{2}{3} - \frac{1}{6}$ is:

   a) $-\frac{1}{2}$ b) $-\frac{1}{3}$ c) $\frac{1}{6}$ d) $\frac{1}{2}$

2. The value of $\frac{2}{3} + 1\frac{3}{4} \times \frac{-8}{4}$ is:

   a) $-\frac{54}{53}$ b) $-\frac{54}{56}$ c) $-\frac{1}{3}$ d) $\frac{1}{2}$

3. The value of $4^3 - 2^3$ is:

   a) -8   b) 8   c) 56   d) 72

4. Determine the value of x in the proportion: $3 : 5 = x : 15$

   a) 3   b) 5   c) 6   d) 9

5. Determine the value of x that satisfies the equation: $4x = 20$

   a) 4   b) 5   c) 6   d) 20

6. Find the value of the expression: $-3k - 4k^2 + 4h - 7$, if $k = -3 \text{ and } h = 4$

   a) -18   b) 18   c) 42   d) 54

7. The temperature outside is $-5^\circ C$ on Monday. Overnight, it drops by $3^\circ C$. Between 9am and noon the next day, it rises $2^\circ C$. What is the temperature on Tuesday at noon?

   a) $-10^\circ C$ b) $-6^\circ C$ c) $-4^\circ C$ d) $0^\circ C$

8. A number is multiplied by 5 and then 9 is subtracted from the result, giving 51. What is the original number?

a) 8.4   b) 12   c) 15   d) 210

9. The number of white balls and red balls in a jar is in the ratio of 3:2. If there are 9 white balls, how many red balls are there?

a)   2   b) 3   c) 5   d) 8

10. Using the triangle on the grid shown,to determine where the triangle moves to if you rotate it $90°$ clockwise about the origin. What are the NEW coordinates of the vertices of the triangle after the rotation?
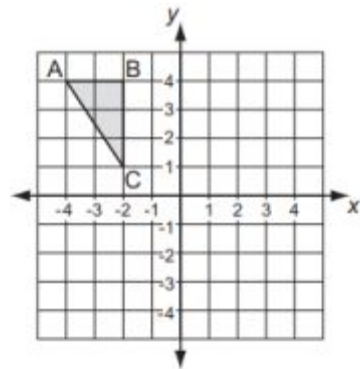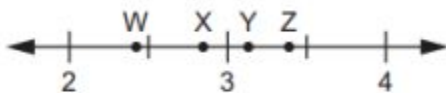

a) $A'(-4, -4)\ B'(-4, -2)\ C'(-1, -2)$
b) $A'(4, 4)\ B'(2, 4)\ C'(2, 1)$
c) $A'(-4, -4)\ B'(-2, -4)\ C'(-2, -1)$
d) $A'(4, 4)\ B'(4, 2)\ C'(1, 2)$

11. Rectangle LOSP is shown. If line segments MQ and NR are perpendicular to the line segment LO, which shape is similar to rectangle LOSP?
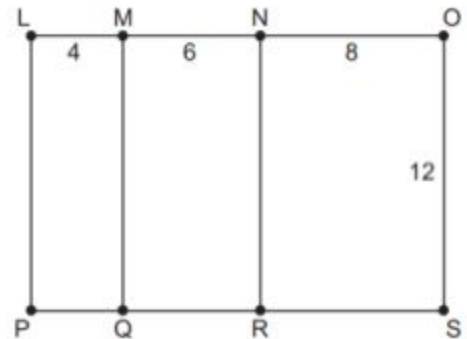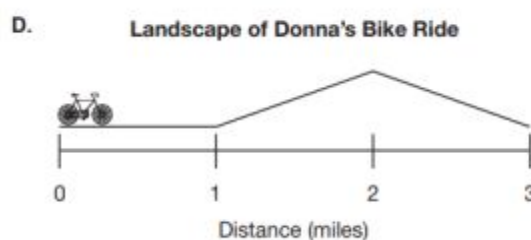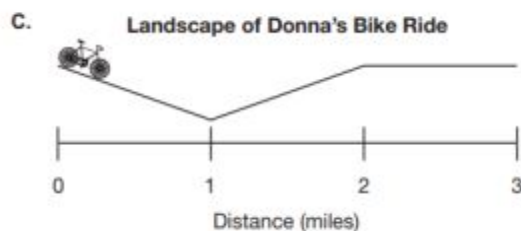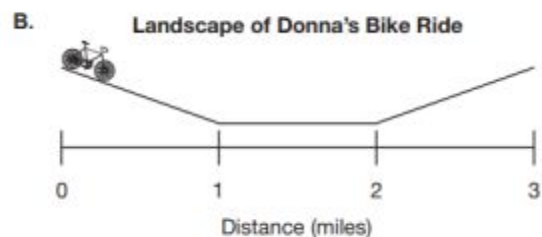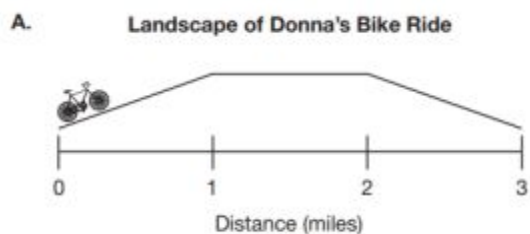

a) LMQP
b) LNRP
c) MNRQ
d) OSRN

12. Use the number line below to answer the question:

Which point on the numberline is the BEST approximation of $\sqrt{6}$?

a) W
b) X
c) Y
d) Z

13. You rode your bike for three miles. For the first mile, you travelled 18 miles/hour. For the second mile, you travelled 15 miles/hour. For the third mile, you travelled 21 miles/hour.
Which diagram is the best match of the terrain for your bike ride?

A. Landscape of Donna's Bike Ride

Distance (miles)

B. Landscape of Donna's Bike Ride

Distance (miles)

C. Landscape of Donna's Bike Ride

Distance (miles)

D. Landscape of Donna's Bike Ride

Distance (miles)

14. The paper cup below is in the shape of a cone. What is the capacity of the cup? $V = \pi r^2 \dfrac{h}{3}$

a) $2\frac{1}{2}\pi\ in^3$
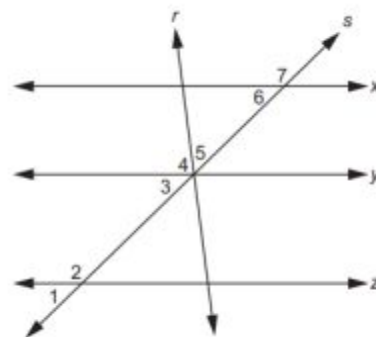b) $3\frac{3}{4}\pi\ in^3$
c) $5\pi\ in^3$
d) $60\pi\ in^3$

|←—3 in.—→|

5 in.
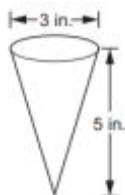
15. In the diagram, lines **x, y,** and **z, are all PARALLEL,** and lines **r** and **s INTERSECT** at line **y.**
Which equation is true?

a) $\angle 1 = 180° - \angle 7$
b) $\angle 2 = 90° + \angle 5$
c) $\angle 3 + \angle 4 = \angle 7$
d) $\angle 5 + \angle 6 = \angle 7$

16. A group of four friends each mowed lawns after school. The total number of lawns mowed can be represented by the equation below. Each friend is represented by a term in the equation. How many lawns, "x", did the first friend mow?

$$x + \frac{1}{3}x + \frac{1}{2}x + 16 = 49$$

a) 11   b) 18   c) 27   d) $36 \frac{1}{6}$

LONG ANSWER:

17. Two groups of tourists each have 60 people. 75% of the first group, and $\frac{2}{3}$ of the second group get on a bus to travel to a museum. How many more people from the first group boarded the bus?

18. A rectangle's length is 4 times bigger than its width. If the area of the rectangle is $49 \ cm^2$. What is the perimeter of the rectangle?

19. If a laptop costs $449 plus $129 for software. What is the total cost of your purchase including 13% HST.

20. Justin has 4 more marbles than Lee, and Simi has 3 times as many marbles as Justin. If Lee has "n" marbles, write an expression that could be used to determine how many marbles Simi has.

21. Find the area of the shaded shape:

40 cm

14 cm

10 cm

25 cm

12 cm