

Name \_\_\_\_\_

Math 7 Honors

Date \_\_\_\_\_

**Final Exam Review #5**

**Final Exam – Monday, June 18<sup>th</sup> (8:00 am)**

*Directions: Show your work. You may use a calculator.*

1. Jake and Connor are training for a marathon. Jake runs 10 miles the first week, and then 2 miles each week after. Connor runs 4 miles the first week, and then 5 miles each week after. Determine the number of weeks it will take for Jake and Connor to run the same number of miles.

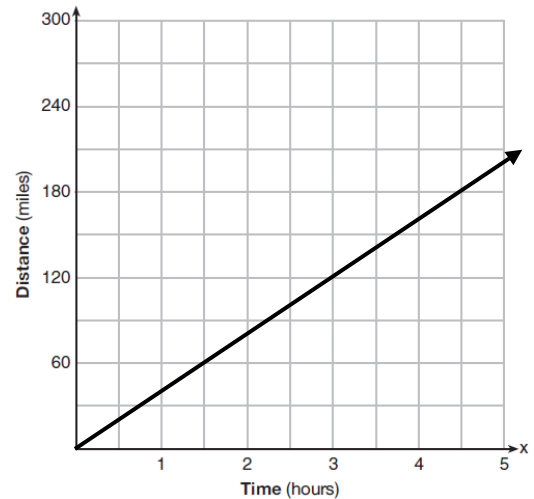
**Part A** Write an equation to determine the number of weeks it will be before they have run the same number of miles.

Equation \_\_\_\_\_

**Part B** Solve your equation from *Part A*.

Answer \_\_\_\_\_

2. Rachel and her family are driving to Florida during their summer vacation. The distance they travel is represented by the graph below.



Based on the graph, which of the following statements is true?

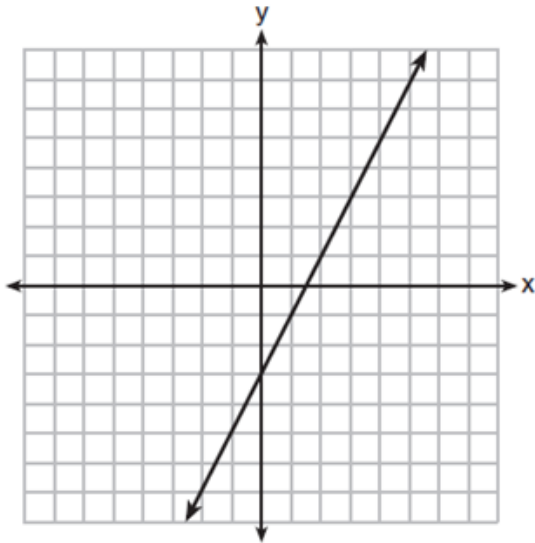
- A** They are traveling at a constant speed of 75 miles per hour.
- B** Their speed is increasing as the time increases.
- C** They are traveling at a constant speed of 40 miles per hour.
- D** They are traveling at a constant speed of 45 miles per hour.

3. Simplify the expression below.

$$\sqrt{80} + 7\sqrt{5}$$

4. Write the equation of the line that passes through the points (3, 11) and (-2, 1).

5. Emily graphed the linear equation shown.



Which of the equations below has the same  $y$ -intercept as Emily's?

- A  $6y + x = 18$                       C  $27 + 3y = 6x$
- B  $y + 3 = 6x$                          D  $y = -3x + 6$

6. Peter compared his quiz grades for the first and second semester of his math class.

*Semester 1:* 78, 83, 88, 91, 94

*Semester 2:* 77, 80, 85, 88, 91, 92, 97

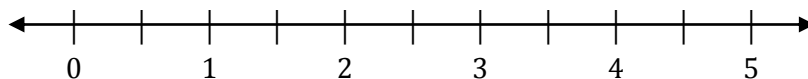
Which statement about Peter's quiz grades is **not** true?

- A The interquartile range for semester 1 is greater than the interquartile range for semester 2.
- B The median score for semester 1 is greater than the median score for semester 2.
- C The lower quartile for semester 1 is greater than the lower quartile for semester 2.
- D The upper quartile for semester 2 is greater than the upper quartile for semester 1.

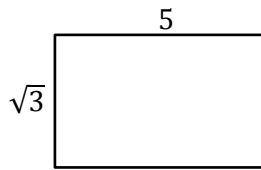
7. Bella collected data on the number of hours she practiced tumbling on Sunday through Thursday nights for a period of 2 weeks. The data are shown in the table below.

	Sun	Mon	Tues	Wed	Thurs
Week 1	4	2	3.5	1	2
Week 2	4	2.5	2.5	3	1.5

Construct a box-plot for these values.

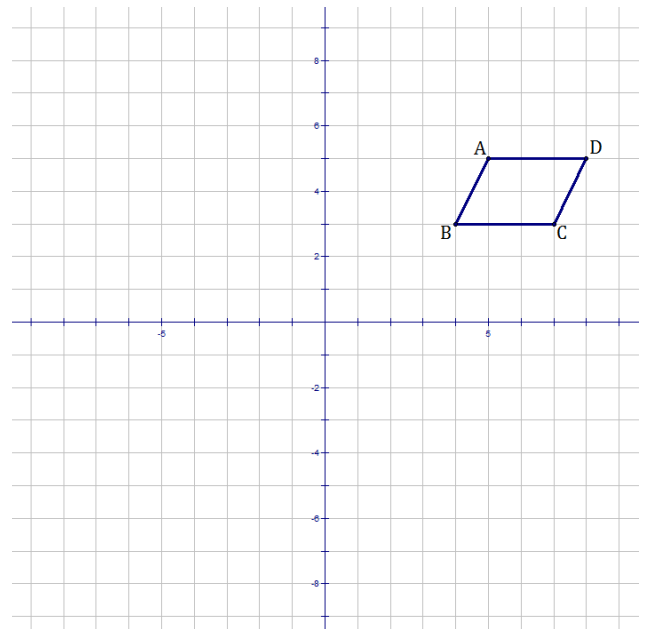


8. Josselyn drew the rectangle shown below. Determine the diagonal length of the rectangle *in simplest radical form*. Show your work.



Answer \_\_\_\_\_

9. Parallelogram ABCD is shown below.



**Part A**

Show the image of parallelogram ABCD after a reflection over the  $x$ -axis.

**Part B**

Show the image of parallelogram A'B'C'D' after the translation  $(x, y) \rightarrow (x - 4, y - 2)$ .

10. What is the smallest integer in the solution set?

$$2x + 5 > 11$$

- A 2
- B 3
- C 4
- D 5

11. Solve for  $x$ .

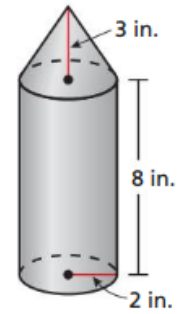
$$\frac{2x + 5}{4} = \frac{3x - 1}{8}$$

- A -11
- B -1
- C 1
- D 11

12. Simplify the expression below.

$$5y(4y^2 + 8y - 2)$$

13. The mold for a giant Crayola crayon is shown below.  
Determine the amount of wax needed to fill the mold *in terms of*  $\pi$ .



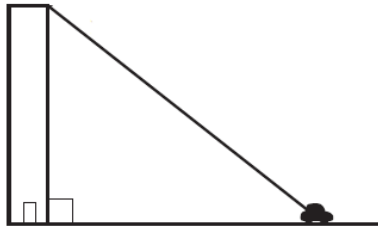
Cone  

$$V = \frac{1}{3}\pi r^2 h$$

Cylinder  

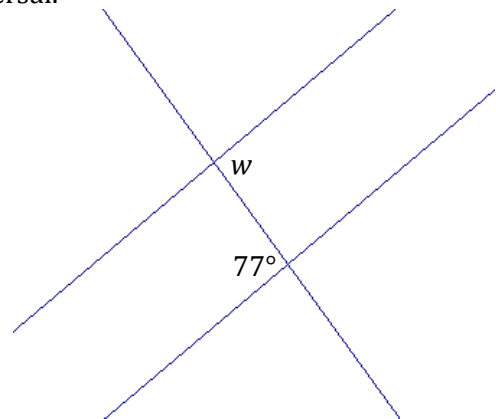
$$V = \pi r^2 h$$

14. A car is parked 42 feet away from an apartment building. The height of the building is 40 feet. What is the distance from the top of the apartment building to the parked car?



Answer \_\_\_\_\_ feet

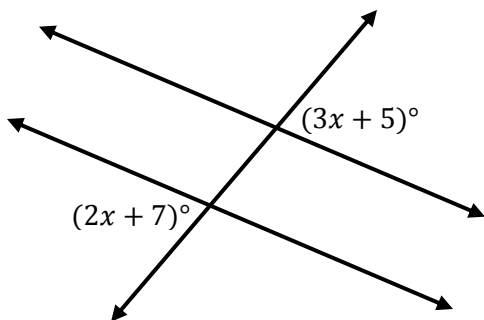
15. In the diagram below, parallel lines are cut by a transversal.



Which of the following statements correctly explains the value of  $w$ ?

- A  $103^\circ$ , because the angles shown are supplementary.
- B  $77^\circ$ , because the angles shown are vertical.
- C  $77^\circ$ , because the angles shown are corresponding.
- D  $77^\circ$ , because the angles shown are alternate interior.

16. Given two parallel lines cut by a transversal.



Which equation could be used to determine the value of  $x$ ?

- A  $(3x + 5) + (2x + 7) = 90$
- B  $(3x + 5) + (2x + 7) = 180$
- C  $(3x + 5) = (2x + 7)$
- D  $(3x + 5) \cdot (2x + 7) = 180$