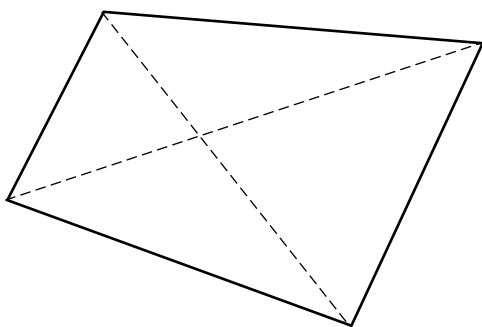
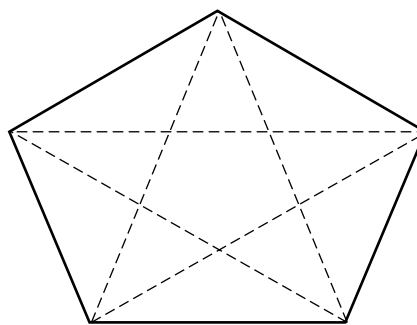


## Mathematics, Grade 10

- 21** Alex wanted to find a pattern to predict the total number of diagonals in a convex polygon. He used each of the figures below to determine the number of diagonals in the 4-sided convex polygon and the 5-sided convex polygon shown below.



**4-sided convex polygon**



**5-sided convex polygon**

- a. Create a table like the one shown below in your Student Answer Booklet. Complete the table to show the relationship between the number of sides, the number of diagonals drawn from each vertex, and the total number of diagonals in each of the convex polygons listed.

Number of sides	4	5	6	7	8
Number of diagonals from each vertex	1	2	3		
Total number of diagonals	2	5	9		

- b. What is the total number of diagonals that a convex polygon of 12 sides has?
- c. Write an expression which represents the number of diagonals that a convex polygon of  $n$  sides has.

*Reporting Category for Item 21: **Geometry***

Session 2, Multiple-Choice Questions 

- 22 The rectangle shown below has a width of 2.5 feet and a perimeter of 13 feet.



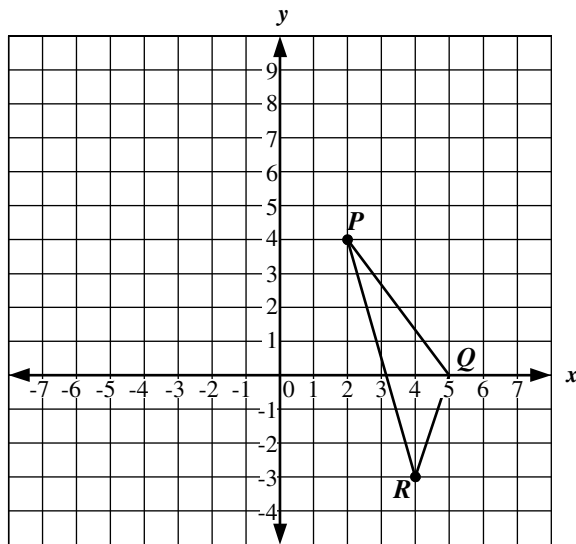
What is the area of the rectangle?

- A. 4 square feet
- B. 8 square feet
- C. 10 square feet
- D. 10.5 square feet

*Reporting Category for Item 22: Measurement*

## Mathematics, Grade 10

- 23 Isaac is going to draw  $\triangle STU$  on the grid shown below so that it is congruent to  $\triangle PQR$ .



He located point  $S$  at  $(-1, 0)$  and point  $T$  at  $(-4, 4)$ . Which of the following coordinates represents a possible location for point  $U$ ?

- A.  $(-3, 6)$
- B.  $(-3, 7)$
- C.  $(-4, 3)$
- D.  $(-4, 7)$

Reporting Category for Item 23: **Geometry**

## Mathematics, Grade 10

24 An important formula in statistics is  $z = \frac{(x - \mu)}{\sigma}$ . Which of the following represents this equation solved for  $x$  in terms of  $z$ ,  $\mu$ , and  $\sigma$ ?

A.  $x = z\sigma + \mu$

B.  $x = z\sigma - \mu$

C.  $x = \frac{z + \mu}{\sigma}$

D.  $x = \frac{z - \mu}{\sigma}$

*Reporting Category for Item 24: Patterns, Relations, and Algebra*