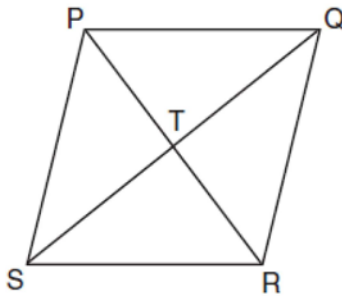


**G.CO.C.11: Special Quadrilaterals 3**

- 1 The perimeter of a square is 56. Express the length of a diagonal of the square in simplest radical form.

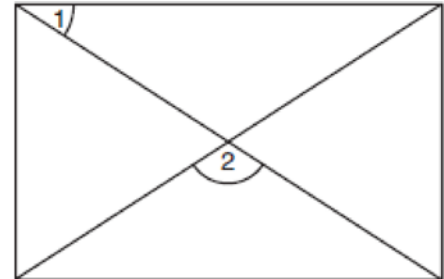
- 2 In rectangle  $ABCD$ ,  $\overline{AC} = 3x + 15$  and  $\overline{BD} = 4x - 5$ . Find the length of  $\overline{AC}$ .

- 3 In the diagram of rhombus  $PQRS$  below, the diagonals  $\overline{PR}$  and  $\overline{QS}$  intersect at point  $T$ ,  $PR = 16$ , and  $QS = 30$ . Determine and state the perimeter of  $PQRS$ .

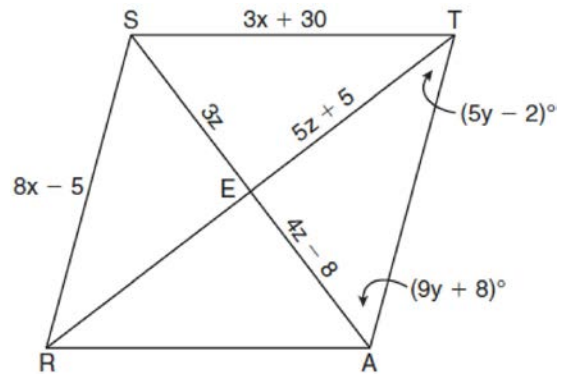


- 4 In rhombus  $ABCD$ , the measure, in inches, of  $\overline{AB}$  is  $3x + 2$  and  $\overline{BC}$  is  $x + 12$ . Find the number of inches in the length of  $\overline{DC}$ .

- 5 As shown in the accompanying diagram, a rectangular gate has two diagonal supports. If  $m\angle 1 = 42$ , what is  $m\angle 2$ ?



- 6 In the diagram below, quadrilateral  $STAR$  is a rhombus with diagonals  $\overline{SA}$  and  $\overline{TR}$  intersecting at  $E$ .  $ST = 3x + 30$ ,  $SR = 8x - 5$ ,  $SE = 3z$ ,  $TE = 5z + 5$ ,  $AE = 4z - 8$ ,  $m\angle RTA = 5y - 2$ , and  $m\angle TAS = 9y + 8$ . Find  $SR$ ,  $RT$ , and  $m\angle TAS$ .



- 7 Al says, "If  $ABCD$  is a parallelogram, then  $ABCD$  is a rectangle." Sketch a quadrilateral  $ABCD$  that shows that Al's statement is *not* always true. Your sketch must show the length of each side and the measure of each angle for the quadrilateral you draw.

### G.CO.C.11: Special Quadrilaterals 3

#### Answer Section

1 ANS:

$14\sqrt{2}$ . The length of each side of the square is  $\frac{56}{4} = 14$ .  $c = \sqrt{14^2 + 14^2} = \sqrt{2 \times 14^2} = 14\sqrt{2}$

REF: 010736a

2 ANS:

75. The diagonals of a parallelogram are congruent.  $3x + 15 = 4x - 5$ .  $AC = 3(20) + 15 = 75$ .  
 $x = 20$

REF: 010533a

3 ANS:

The four small triangles are 8-15-17 triangles.  $4 \times 17 = 68$

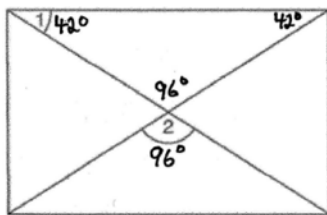
REF: 081726geo

4 ANS:

17. A rhombus has four congruent sides.  $3x + 2 = x + 12$ .  $(5) + 12 = 17$ .  
 $x = 5$

REF: 080735a

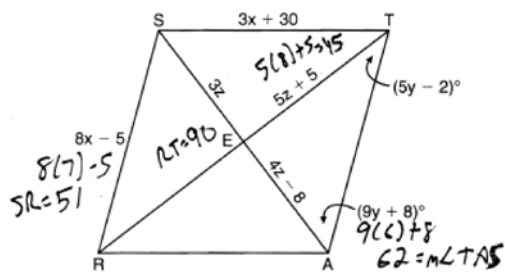
5 ANS:



96.

REF: 010835a

6 ANS:



$$8x - 5 = 3x + 30. \quad 4z - 8 = 3z. \quad 9y + 8 + 5y - 2 = 90.$$

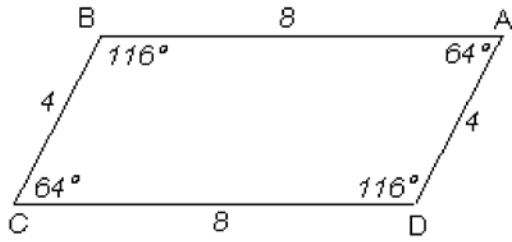
$$5x = 35 \quad z = 8 \quad 14y + 6 = 90$$

$$x = 7 \quad 14y = 84$$

$$y = 6$$

REF: 061038ge

7 ANS:



REF: 010025a