

Quiz-3: 16.3 Corresponding Parts of Similar Figures



1

$\triangle DEF$ is similar to $\triangle STU$. Enter a proportion that contains EF and SU .

If two figures are similar corresponding sides are proportional.

Find the corresponding side to \overline{EF} .

The corresponding side to \overline{EF} is \overline{TU} .

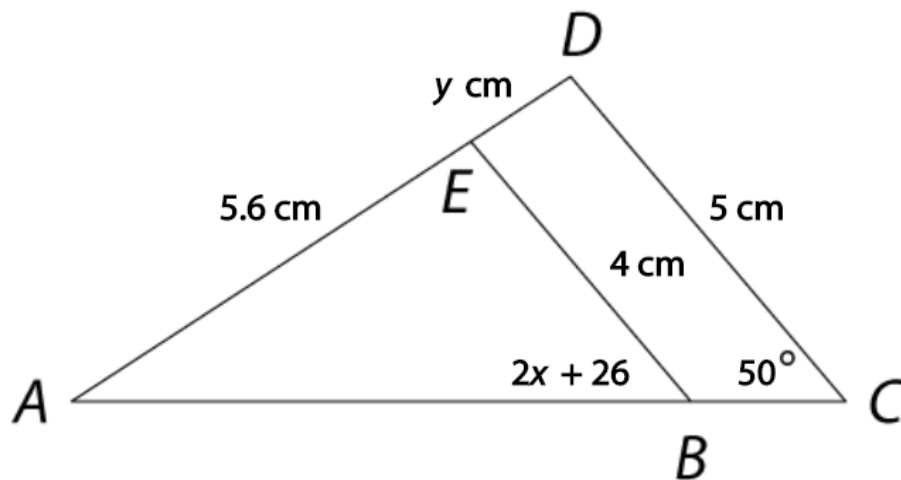
Find the corresponding side to \overline{SU} .

The corresponding side to \overline{SU} is \overline{DF} .

So, a proportion that contains \overline{EF} and \overline{SU} is $\frac{EF}{TU} = \frac{DF}{SU}$ or $\frac{TU}{EF} = \frac{SU}{DF}$.

2

Use the diagram in which $\triangle ABE \sim \triangle ACD$.



Find the value of x .

$$m \angle C = m \angle ABE$$

$$50 = 2x + 26$$

$$24 = 2x$$

$$12 = x$$

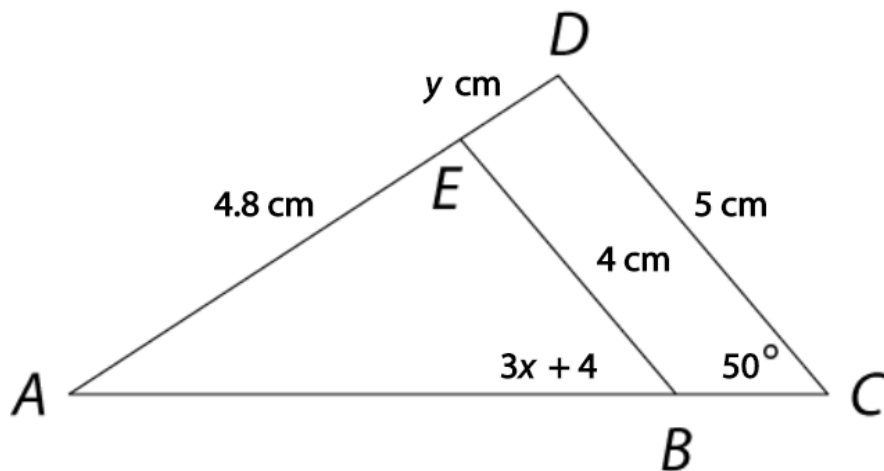
Substitute 50 for $m \angle C$ and $2x + 26$ for $m \angle ABE$.

Subtract 26 from both sides.

Divide both sides by 2.

3

Use the diagram in which $\triangle ABE \sim \triangle ACD$.



Find the value of y .

$$\frac{AD}{AE} = \frac{CD}{BE}$$

$$\frac{4.8 + y}{4.8} = \frac{5}{4}$$

$$4.8 + y = \frac{5}{4} \cdot 4.8$$

$$4.8 + y = 6$$

$$y = 1.2$$

Substitute the lengths of AD , AE , BE , and CD .

Multiply both sides by 4.8.

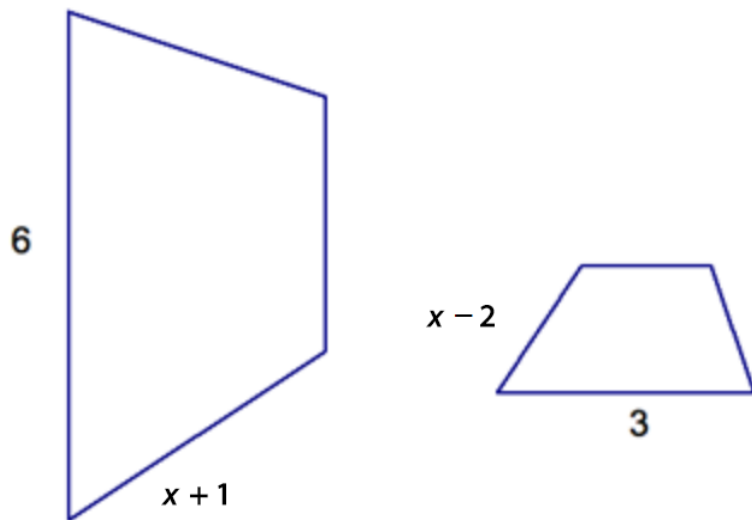
Simplify the right side.

Subtract 4.8 from both sides.

Quiz-3 Guide



The figures in the picture are similar to each other. Find the value of x , rounded to the nearest whole number.



The longer bases of the trapezoids are 6 units and 3 units, so the scale factor is 2:1.

$$\frac{(x + 1)}{(x - 2)} = \frac{2}{1}$$

Set up the proportion.

$$x + 1 = 2(x - 2)$$

Multiply both sides by $(x - 2)$.

$$x + 1 = 2x - 4$$

Distribute the 2.

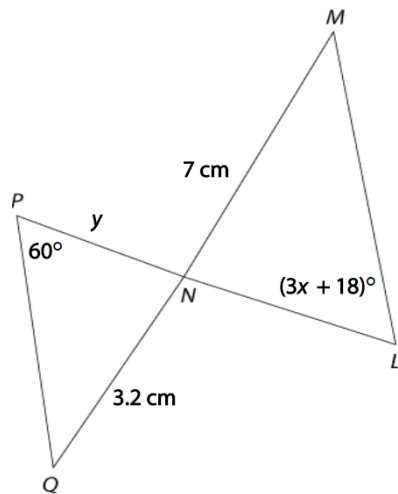
$$5 = x$$

Subtract x from both sides and add 4 to both sides.

Quiz-3 Guide

5

In the diagram, $\triangle NPQ \sim \triangle NLM$ and $PL = 8$



Part a.

Since $\triangle NPQ$ is similar to $\triangle NLM$, $\angle L \cong \angle P$ and the measure of their angles are equal.

$$\begin{aligned} 3x + 18 &= 60 \\ 3x &= 42 \\ x &= 14 \end{aligned}$$

Set $m\angle L$ equal to $m\angle P$.

Subtract 18 from both sides.

Divide both sides by 3.

Part b.

$$\frac{NL}{NM} = \frac{NP}{NQ}$$

$$\frac{8 - y}{7} = \frac{y}{3.2}$$

$$\begin{aligned} 3.2(8 - y) &= 7y \\ 25.6 - 3.2y &= 7y \\ 25.6 &= 10.2y \\ 2.51 &= y \end{aligned}$$

Use corresponding sides to set up a proportion.

Substitute $8 - y$ for NL , 7 for NM , y for NP , and 3.2 for NQ .

Multiply both sides by 7 and 3.2 .

Distribute 3.2 .

Add $3.2y$ to both sides.

Divide both sides by 10.2 , rounding to the nearest hundredth.

So, $NP = 2.51$ and $NL = 8 - 2.51 = 5.49$.