## Unit 4 Lesson 6: Working with Trigonometric Ratios

### 1 This Time with Strategies (Warm up)

#### Student Task Statement

Estimate the value of $z$.



### 2 New Names, Same Ratios

#### Student Task Statement

1. Use your calculator to determine the values of $cos\left(50\right)$, $sin\left(50\right)$, and $tan\left(50\right)$.
2. Use your calculator to determine the values of $cos\left(40\right)$, $sin\left(40\right)$, and $tan\left(40\right)$.
3. How do these values compare to your chart?
4. Find the value of $z$.



#### Activity Synthesis

$cos\left(θ\right)=\frac{adjacent}{hypotenuse}$



$sin\left(θ\right)=\frac{opposite}{hypotenuse}$



$tan\left(θ\right)=\frac{opposite}{adjacent}$



### 3 Solve These Triangles

#### Student Task Statement

1. Solve for $x$.
* 
1. Solve for $y$.
* 
1. Find all the missing sides and angle measures.
	1. The measure of angle $X$ is 90 degrees and angle $Y$ is 12 degrees. Side $XZ$ has length 2 cm.
	2. 
	3. The measure of angle $K$ is 90 degrees and angle $L$ is 71 degrees. Side $LM$ has length 20 cm.

#### Images for Activity Synthesis





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