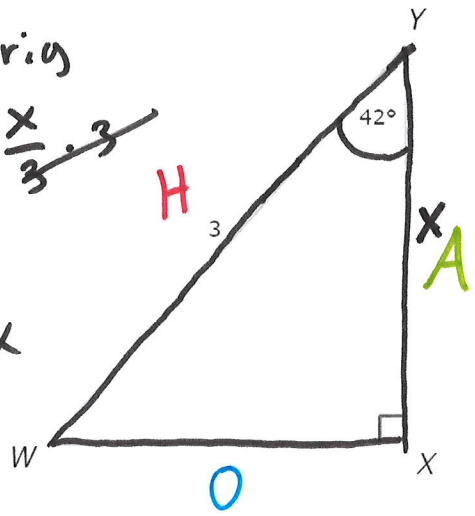
Worked Examples - Trigonometric ratios: find a side length (IXL Geometry Q.11)

1. Find XY. Write your answer as an integer or as a decimal rounded to the nearest tenth.



6. Find trig

3. $0.7431 = \frac{x}{3} \cdot 3$

7. Solve

$2.2293 = x$

8. Round

$2.2 = x$

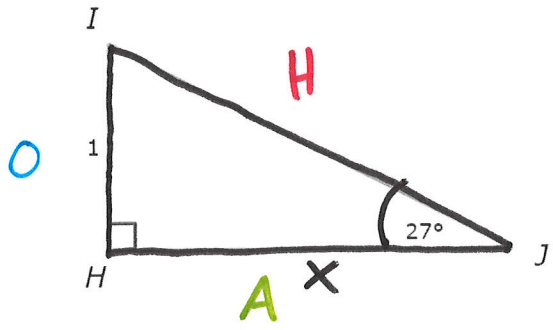
H

A

O

1. Label
2. what do I have?
   what am I looking for?
   Have - H
   Looking - A
3. which Trig Function?
   cos
4. Formula
   $\cos(\theta) = \frac{A}{H}$
5. Plug in
   $\cos(42) = \frac{x}{3}$

2. Find HJ. Write your answer as an integer or as a decimal rounded to the nearest tenth.



O

Have - O

Looking - A

tan

$\tan(\theta) = \frac{O}{A}$

$\tan(27) = \frac{1}{x}$

$x \cdot 0.5095 = \frac{1}{x} \cdot x$

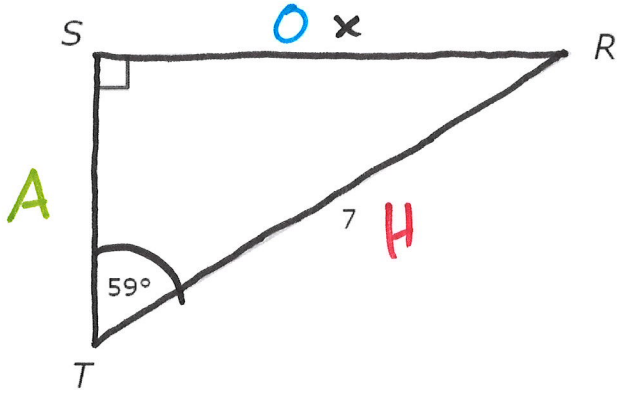
$x(0.5095) = 1$

$x = \frac{1}{0.5095}$

$x = 1.9627$

$x = 2$

3. Find RS. Write your answer as an integer or as a decimal rounded to the nearest tenth.



Have - H

Looking - O

sin

$\sin(\theta) = \frac{O}{H}$

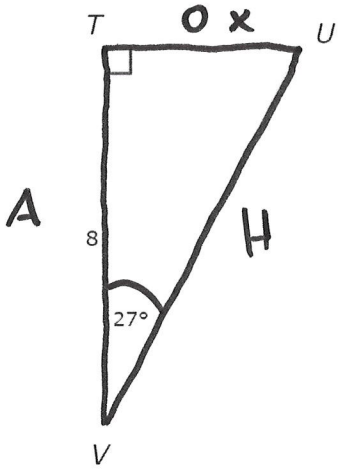
$\sin(59) = \frac{x}{7}$

$7 \cdot 0.857 = \frac{x}{7} \cdot 7$

$5.999 = x$

$\boxed{6 = x}$

4. Find TU. Write your answer as an integer or as a decimal rounded to the nearest tenth.



Have - A

Looking - O

tan

$\tan(\theta) = \frac{O}{A}$

$\tan(27) = \frac{x}{8}$

$0.5095 = \frac{x}{8}$

$8(0.5095) = x$

$4.076 = x$

$\boxed{4.1 = x}$

OR TRY IT LIKE THIS

$8 \cdot \tan(27) = \frac{x}{8} \cdot 8$

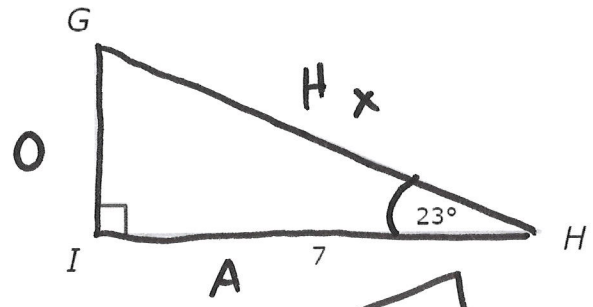
$8\tan(27) = x$

↓ calculator

$4.076 = x$

$\boxed{4.1 = x}$

5. Find GH. Write your answer as an integer or as a decimal rounded to the nearest tenth.



Have - A
Look - H
Cos

$\cos(\theta) = \frac{A}{H}$

$\cos(23) = \frac{7}{x}$

$0.9205 = \frac{7}{x}$

$x = \frac{7}{0.9205}$

$x = 7.60456$

$x = 7.6$

OR TRY IT LIKE THIS

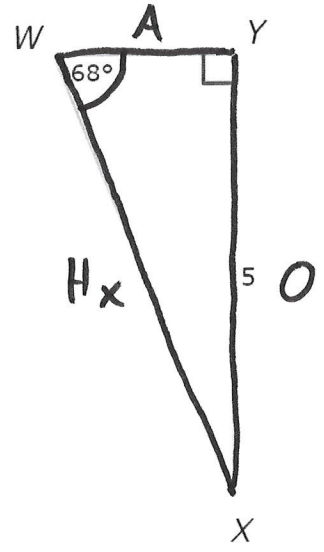
$\cos(23) = \frac{7}{x}$

$x = \frac{7}{\cos(23)}$

$x = 7.60452$

$x = 7.6$

6. Find WX. Write your answer as an integer or as a decimal rounded to the nearest tenth.



Have - O
Look - H
sin

$\sin(\theta) = \frac{O}{H}$

$\sin(68) = \frac{5}{x}$

$0.9272 = \frac{5}{x}$

$x = \frac{5}{0.9272}$

$x = 5.39257981$

$x = 5.4$