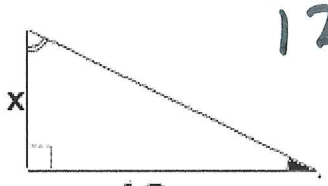
Name: Key

Final Exam Prep Practice

Triangles Unit Examples

1. Find x.

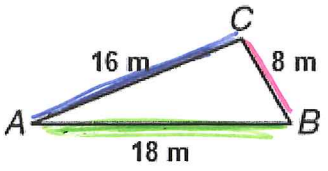


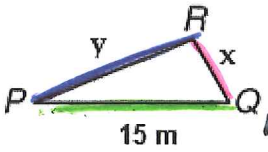
$\frac{x}{12} = \frac{7}{x}$ $x^2 = 84$ $x = \sqrt{84}$

$x = 2\sqrt{21}$

$x \approx 9.2$

2. If $\Delta ABC \sim \Delta PQR$, find the perimeter of ΔPQR.





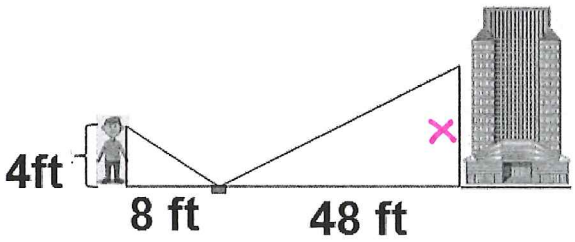
Find x: $\frac{x}{8} = \frac{15}{18}$ $18x = 120$ $x = 6.\overline{6} = 6.7$

Find y: $\frac{y}{16} = \frac{15}{18}$ $18y = 240$ $y = 13.\overline{3}$

Perimeter: $6.7 + 13.3 + 15$

$P = 35$ m

3. Wilson places a mirror on the ground between himself and his office building. He stands so that he can see the top window on the 20th floor. The mirror is 8ft from his feet and 48 ft from the base of the office building. Wilson's eyes are 4 ft above the ground. How high is the window when rounding, in meters, to the nearest tenth?



$\frac{x}{4} = \frac{48}{8}$

$8x = 192$

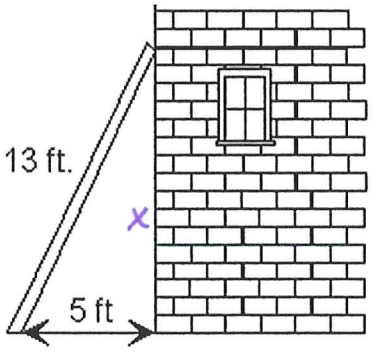
$x = 24$ ft high

4. A ladder is leaning against the building. How high up does the ladder reach if the ladder is 13 ft long and placed 5 ft from the base of the building?

$x^2 + 5^2 = 13^2$

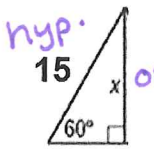
$x^2 = 144$

$x = 12$ ft



5. Find x.

SOH CAH TOA

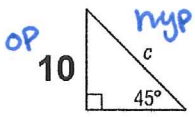


$\sin(60) = \frac{x}{15}$

$15 \times \sin(60) = x$

$12.99 = x$

6. Find c.



$\sin(45) = \frac{10}{c}$

$c \cdot \sin(45) = 10$

$c = \frac{10}{\sin(45)}$

$c \approx 14.14$

7. If a triangle has the side lengths of 10, 8, 6 does it form a right triangle? Why or why not?

Check Pyth. Thm

What is c?

c must be the largest!

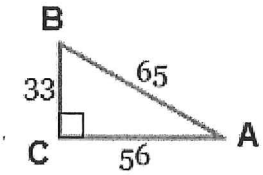
$8^2 + 6^2 \stackrel{?}{=} 10^2$

$64 + 36 \stackrel{?}{=} 100$

$100 = 100$ ✓

Yes, because it follows the Converse of the Pyth. thm.

8. Find Sin A, Cos B, and Tan A.



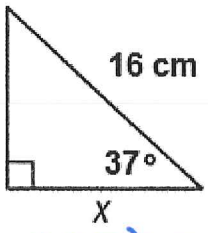
$\sin A = \frac{33}{65}$

$\cos B = \frac{33}{65}$

$\tan A = \frac{33}{56}$

Look for simplified answers on exam!!

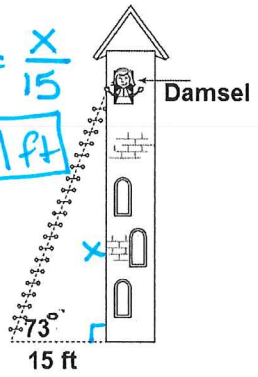
9. Find x.



$\cos(37) = \frac{x}{16}$

$x = 12.8\text{cm}$

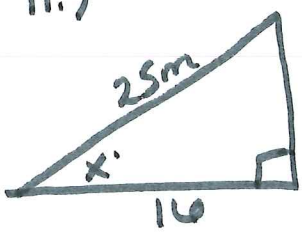
10. How high off the ground is the damsel?



$\tan(73) = \frac{x}{15}$

$x = 49.1\text{ ft}$

11.)

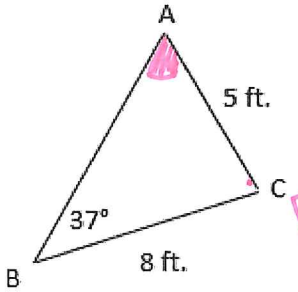


$\cos x = \frac{16}{25}$

$x = \cos^{-1}\left(\frac{16}{25}\right)$

$x = 50.2°$

11. Find <C.



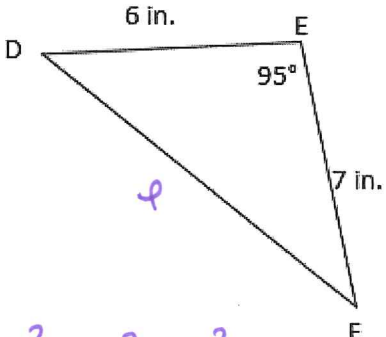
$m\angle A = 74.3°$

$\frac{\sin A}{8} = \frac{\sin(37)}{5}$

$\sin A = \frac{8 \cdot \sin(37)}{5}$

$\angle A = \sin^{-1}\left(\frac{8 \cdot \sin(37)}{5}\right)$

12. Find DF.



$e^2 = 6^2 + 7^2 - 2 \cdot 6 \cdot 7 \cos(95°)$

$e = \sqrt{6^2 + 7^2 - 2 \cdot 6 \cdot 7 \cos(95)}$

$e = 9.6\text{in}$