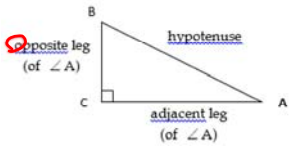
Guiding Question: Can I apply my knowledge of trigonometry to solve triangles?

p.72-73	Trigonometry Day 2	Ch. 14

p. 72



Trigonometric Ratios

Sine ratio (sin A) = $\frac{\text{opposite leg}}{\text{hypotenuse}}$

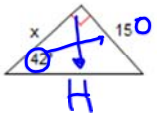
Cosine ratio (cos A) = $\frac{\text{adjacent leg}}{\text{hypotenuse}}$

Tangent ratio (tan A) = $\frac{\text{opposite leg}}{\text{adjacent leg}}$

Warm-up:

Solve for x. Round side lengths to the nearest tenth.

1.

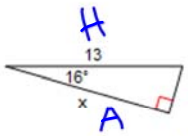


$x \tan 42 = \frac{15}{x} \cdot x$

$X = \frac{15}{\tan 42}$

$X = 16.7$

2.



$\cos 16 = \frac{X}{13}$

$13 \cdot \cos 16 = X$

$X = 12.5$

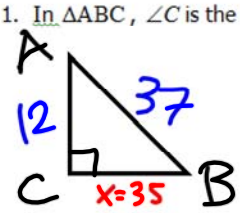
Practice:

Work on yesterday's homework

p. 73

SOH-CAH-TOA Trig Application Problems

1. In ΔABC, $\angle C$ is the right angle. Suppose $\sin B = \frac{12}{37}$ $\frac{O}{H}$ Find $\cos B$.



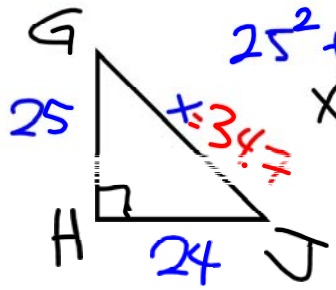
$12^2 + x^2 = 37^2$

$x^2 = 1225$

$x = 35$

$\cos B = \frac{35}{37}$

2. In ΔGHJ, $\angle H$ is the right angle. Suppose $\tan G = \frac{24}{25}$ $\frac{O}{A}$ Find $\sin J$.



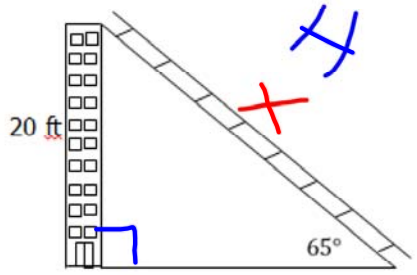
$25^2 + 24^2 = x^2$

$x^2 = 1201$

$x = 34.7$

$\sin J = \frac{25}{34.7}$

3. A ladder leaning against a building makes an angle of 65° with the ground and reaches a point on the building 20 feet above the ground. What is the length of the ladder to the nearest foot?



$\sin 65 = \frac{20}{x}$

$x = \frac{20}{\sin 65}$

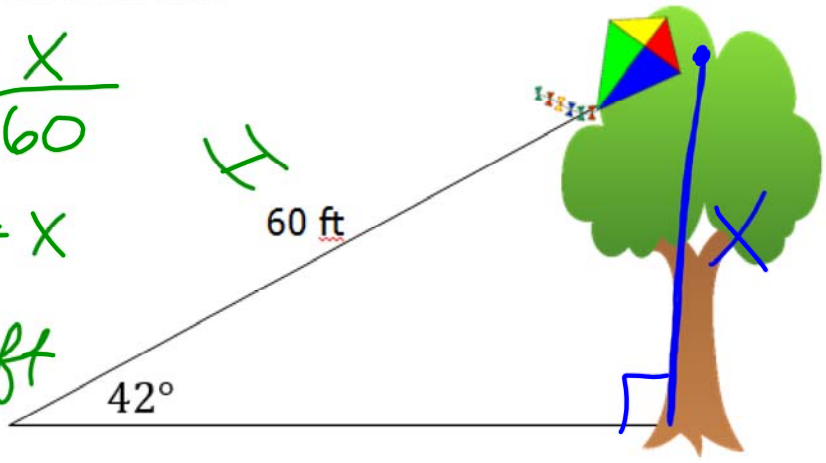
$x = 22$ ft.

4. A kite string that got stuck in a tree is 60 feet long and makes an angle of 42° with the ground. What height on the tree does the kite reach?

$\sin 42 = \frac{x}{60}$

$60 \cdot \sin 42 = x$

$x = 40.1$ ft



Trigonometry

Day 2 Homework!

start on back

9–16