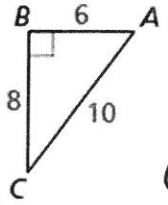
Name:_____ Period:_____

9.7 Practice Problems

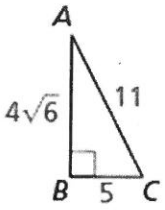
1. Determine which angle has the given trigonometric ratio.

The cosine of the angle is $\frac{4}{5}$.



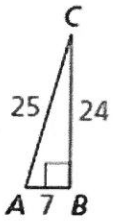
C

The sine of the angle is $\frac{5}{11}$.



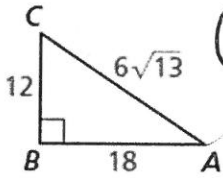
A

The sine of the angle is 0.96.



A

The tangent of the angle is 1.5.



C

2. Find the measure of angles A, B, C, D and E.

sin A = 0.5

30°

cos B = 0.5

60°

tan C = 0.4230

23°

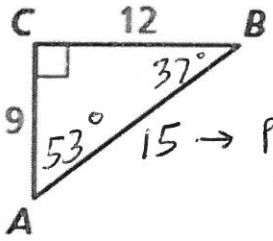
cos D = 0.6721

48°

tan E = 1

45°

3. Solve the triangle. Find all missing sides and angles.

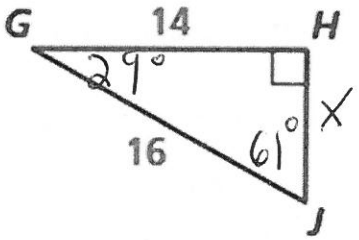


15 → Pythagorean Theorem

$\sin A = \frac{12}{15}$

$A = 53°$

4. Solve the triangle. Find all missing sides and angles.



$14^2 + x^2 = 16^2$

$-14^2 \quad -14^2$

$\sqrt{x^2} = \sqrt{60}$

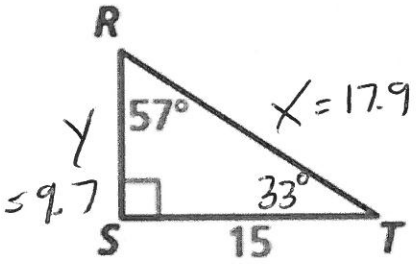
$\sqrt{4}\sqrt{15}$

$2\sqrt{15}$

$\cos G = \frac{14}{16}$

$G = 29°$

5. Solve the triangle. Find all missing sides and angles.



$\sin 57 = \frac{15}{X}$

$\frac{(\sin 57)X}{\sin 57} = \frac{15}{\sin 57}$

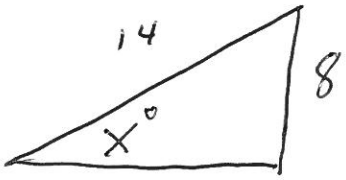
$X = 17.9$

$y^2 + 15^2 = 17.9^2$

$-15^2 \quad -15^2$

$\sqrt{y^2} = \sqrt{94.9} = 9.7$

6. In order to unload clay, the body of a dump truck must be elevated to at least a 45 degree angle. The body of a dump truck that is 14 feet long had been raised 8 feet. Will the clay pour out? Explain your reasoning.



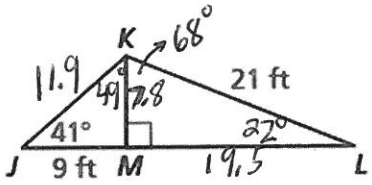
$\sin X = \frac{8}{14}$

$X = 34.8°$

No, because $X < 45°$

7. Solve the triangles.

$\triangle JKM$ and $\triangle LKM$



$\tan 41 = \frac{KM}{9}$

$9 \cdot \tan 41 = KM$

$KJ^2 = 9^2 + 7.8^2$

$\sqrt{KJ^2} = \sqrt{142.2}$

$KJ = 11.9$

$\angle K = 90 - 41 = 49°$

$7.8^2 + ML^2 = 21^2$

$-7.8^2 \quad -7.8^2$

$\sqrt{ML^2} = \sqrt{380.16}$

$ML = 19.5$

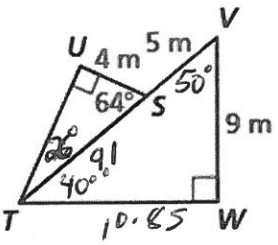
$\tan L = \frac{7.8}{19.5} = .4$

$L = 22°$

$\angle MKL = 90 - 22 = 68°$

8. Solve the triangles.

$\triangle TUS$ and $\triangle VTW$



$\cos 64 = \frac{4}{ST}$

$ST = \frac{4}{\cos 64} = 9.1$

$VT = 9.1 + 5 = 14.1$

$\sin T = \frac{9}{14.1} = .6383 = 40°$

$9^2 + WT^2 = 14.1^2$

$-9^2 \quad -9^2$

$WT^2 = 10.85$