Geometry Name _____

Chapter 8 Lab Quiz Review Date _____ Per _____

Tell whether the triangle with the given side lengths is acute, obtuse, or right. If a triangle can not be formed write not possible.

$a^2+b^2=c^2$ Rt Δ

$c^2+b^2>c^2$ Acute

$c^2+b^2<c^2$ Obtuse

1. 17, 10, 14 (c)

$10^2+14^2 \quad 17^2$

$100+144 \quad 289$

$244 > 289$

Acute

2. $\sqrt{3}, 5, 6$

$(\sqrt{3})^2+5^2 \quad 6^2$

$3+25 \quad 36$

$28 < 36$

obtuse

3. 10, 26, 24 (c)

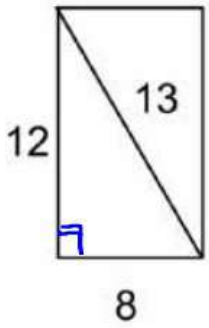
$10^2+24^2 \quad 26^2$

Right $100+576 \quad 676$

$676 = 676$

Tell whether or not the parallelogram can be classified as a rectangle

5.




$8^2+12^2 \stackrel{?}{=} 13^2$

$64+144 \stackrel{?}{=} 169$

$208 \neq 169$

Not a Rectangle

Simplify each Radical

6. $\sqrt{112} = \sqrt{16}\cdot\sqrt{7}$

$= 4\sqrt{7}$

7. $\sqrt{126} = \sqrt{9}\cdot\sqrt{14}$

$3\sqrt{14}$

8. $\sqrt{325} = \sqrt{25}\cdot\sqrt{13}$

$5\sqrt{13}$

Rationalize each denominator. (Make sure you reduce your fraction when possible)

$\sqrt{18} = \sqrt{9}\cdot\sqrt{2}$
$3\sqrt{2}$

9. $\frac{5}{\sqrt{7}}\frac{\sqrt{7}}{\sqrt{7}}$

$\frac{5\sqrt{7}}{7}$

10. $\frac{4}{\sqrt{6}}\frac{\sqrt{6}}{\sqrt{6}}$

$\frac{4\sqrt{6}}{6} = \frac{2\sqrt{6}}{3}$

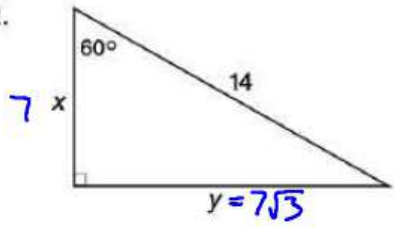
11. $\frac{3}{\sqrt{18}}\frac{\sqrt{18}}{\sqrt{18}} = \frac{3\sqrt{18}}{18} = \frac{\sqrt{18}}{6}$

$= \frac{3\sqrt{2}}{6} = \frac{\sqrt{2}}{2}$

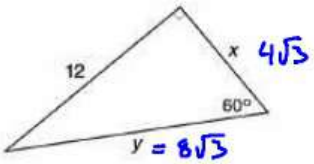
$\frac{12}{\sqrt{3}}\frac{\sqrt{3}}{\sqrt{3}}$ $\frac{12\sqrt{3}}{3} = 4\sqrt{3}$

Find the value of x and y.

12.




13.

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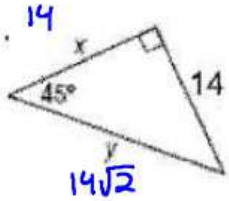
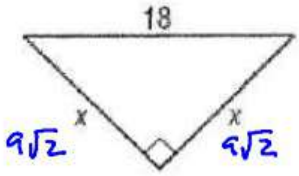



15.

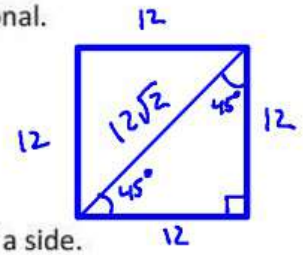



$\frac{18}{\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}}$

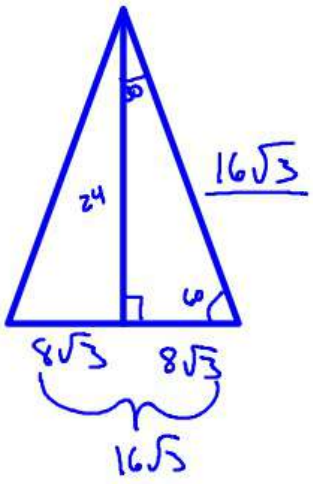
$\frac{18\sqrt{2}}{2}$

$9\sqrt{2}$

16. The perimeter if a square is 48 cm. Find the length of the diagonal.



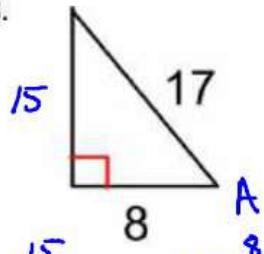

17. The altitude of a equilateral triangle is 24 in. Find the length of a side.




$\frac{24}{\sqrt{3}}\frac{\sqrt{3}}{\sqrt{3}} = \frac{24\sqrt{3}}{3}$

Find the sine, cosine, and tangent for the given angle.

18.



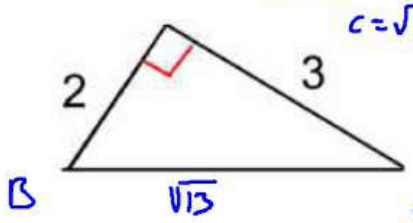

$\sin A = \frac{15}{17}$ $\cos A = \frac{8}{17}$ $\tan A = \frac{15}{8}$

19.

$2^2+3^2=c^2$

$4+9=c^2$

$c=\sqrt{13}$



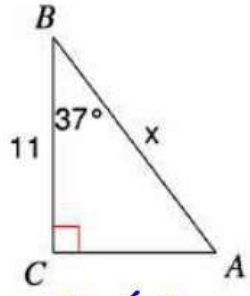

$\sin B = \frac{3}{\sqrt{13}} = \frac{3\sqrt{13}}{13}$

$\cos B = \frac{2}{\sqrt{13}} = \frac{2\sqrt{13}}{13}$

$\tan B = \frac{3}{2}$

Find the side indicated by the variable. Round to the nearest tenth.

20.

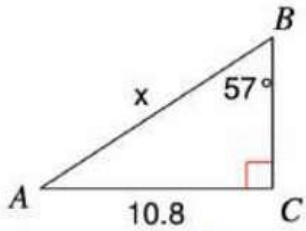



$x(\cos 37^\circ) = \left(\frac{11}{x}\right)x$

$x\cos 37 = 11$

$x = \frac{11}{\cos 37} = 13.8$

21.

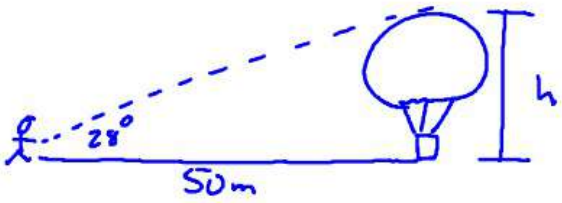



$x(\sin 57^\circ) = \left(\frac{10.8}{x}\right)x$

$x\sin 57^\circ = 10.8$

$x = \frac{10.8}{\sin 57} = 12.9$

22. You are standing 50 meters from a hot air balloon that is preparing to take off. The angle of elevation to the top of the balloon is 28°. Find the height of the balloon.




$\tan 28^\circ = \frac{h}{50}$

$h = 50\tan 28^\circ$

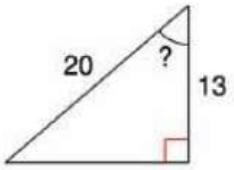
$= 26.6\text{ m}$

↳ Inverse sin/cos/tan

Find the measure of the indicated angle to the nearest degree.

$\sin^{-1}$
$\cos^{-1}$
$\tan^{-1}$

23.

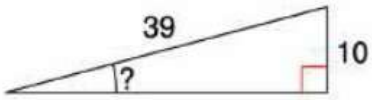



$\cos ? = \frac{13}{20}$

$\cos^{-1}\left(\frac{13}{20}\right) = ?$

$49°$

24.

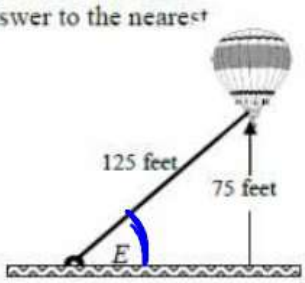



$\sin ? = \frac{10}{39}$

$\sin^{-1}\left(\frac{10}{39}\right) = ?$

$15°$

25. A hot air balloon hovers 75 feet above the ground. The balloon is tethered to the ground with a rope that is 125 feet long. At what angle of elevation, $E$, is the rope attached to the ground? Round your answer to the nearest degree.




$\sin E = \frac{75}{125}$

$\sin^{-1}\left(\frac{75}{125}\right) = m\angle E$

$m\angle E = 37°$