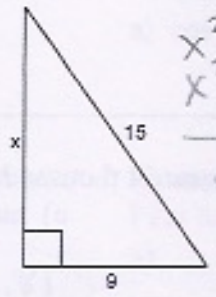
7.1-7.2 Review

Find the value of each variable. Leave your answer exact, if possible, or round to the nearest tenth.

1.



$x^2+9^2=15^2$

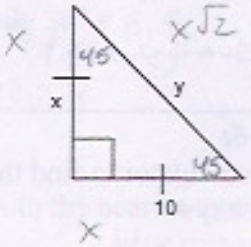
$x^2+81=225$

$-81 \quad -81$

$\sqrt{x^2}=\sqrt{144}$

$x=12$

2.

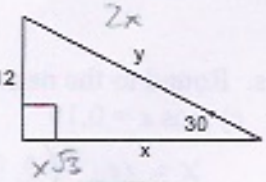


x $x\sqrt{2}$ x

$x=10$

$y=x\sqrt{2}=10\sqrt{2}$

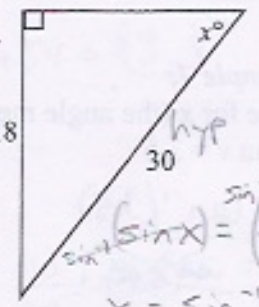
3.



$x=12\sqrt{3}$

$y=2(12)=24$

4.



$y^2+18^2=30^2$

$y^2+324=900$

$-324 \quad -324$

$\sqrt{y^2}=\sqrt{576}$

$y=24$

$\sin^{-1}(\sin x)=\sin^{-1}\left(\frac{18}{30}\right)$

$x=\sin^{-1}\left(\frac{18}{30}\right)=36.9$

The lengths of the sides of a triangle are given. Classify each triangle as acute, obtuse or right.

5. 6, 7, 8

$6^2+7^2>8^2$

acute

6. 15, 39, 36

$15^2+36^2=39^2$

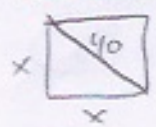
right

7. 16, 10, 12

$10^2+12^2<16^2$

obtuse

8. A square has a 40 cm diagonal. How long is each side of the square? Round your answer the nearest tenth of a centimeter. Then, find the area of the square.



$x^2+x^2=40^2$

$\frac{2x^2}{2}=\frac{1600}{2}$

$\sqrt{x^2}=\sqrt{800}$

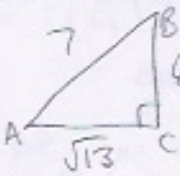
$x=28.3$

$A=28.3\cdot28.3$

side = 28.3 cm

area = 800.89 cm^2

9. Draw ΔABC with $m\angle C=90°$ and $\cos B=\frac{6}{7}$. Use your triangle to find the sinB.



$6^2+x^2=7^2$

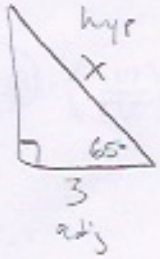
$36+x^2=49$

$-36 \quad -36$

$\sqrt{x^2}=\sqrt{13}$ $x=\sqrt{13}$

$\sin B=\frac{\sqrt{13}}{7}$

10. A ladder leans up against a house. The base of the ladder is 3 ft away from the house. If ladder makes a 65° angle with the ground, how long is the ladder? Round your answer to the nearest tenth.



$(x)\cos 65=\frac{3}{x}(x)$

$\frac{x\cos 65}{\cos 65}=\frac{3}{\cos 65}$ $x=\frac{3}{\cos 65}$

$x=7.1$ ft