

# Honors Geometry

## Test Review 8.1-8.3

Show work to receive full credit.

Name Answer Key

Period H Geo

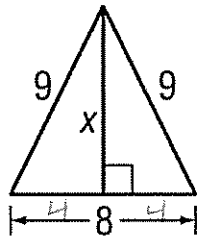
105 1. Find the value of x.

$$4^2 + x^2 = 9^2$$

$$16 + x^2 = 81$$

$$x^2 = 65$$

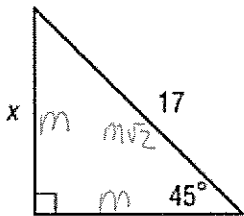
$$x = \sqrt{65}$$



17√2  
2 2. Find the value of x.

$$\frac{m\sqrt{2}}{\sqrt{2}} = \frac{17\sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{17\sqrt{2}}{2}$$

$$x = \frac{17\sqrt{2}}{2}$$



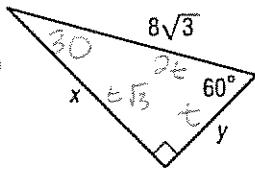
x=12  
y=4√3 3. Find the value of a, x and y

$$t = \frac{8\sqrt{3}}{2}$$

$$t = 4\sqrt{3}$$

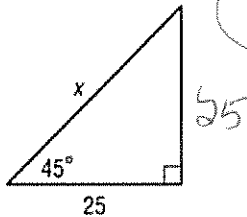
$$x = 12$$

$$y = 4\sqrt{3}$$



25√2 4. Find the value of x.

$$x = 25\sqrt{2}$$



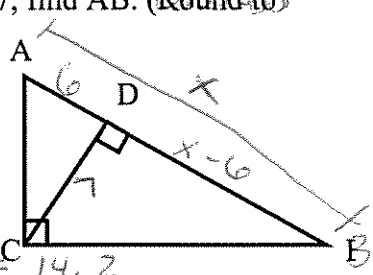
14.2 or 85/6 5. If AD = 6 and CD = 7, find AB. (Round to the nearest tenth)

$$\frac{6}{7} = \frac{7}{x-6}$$

$$49 = 6x - 36$$

$$85 = 6x$$

$$x = 14.2$$



x=6  
y=6√3  
z=3√3 6. Find x, y, and z. (Round to the nearest tenth)

$$\frac{3}{z} = \frac{z}{9}$$

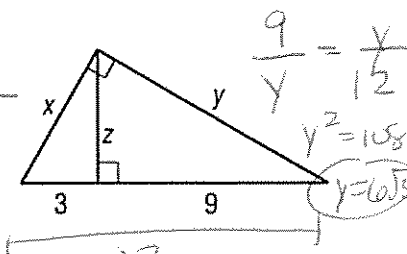
$$z^2 = 27$$

$$z = 3\sqrt{3}$$

$$\frac{3}{x} = \frac{x}{12}$$

$$x^2 = 36$$

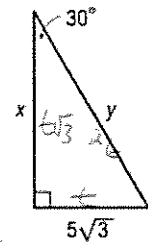
$$x = 6$$



x=15  
y=10√3 7. Find x and y.

$$t = 5\sqrt{3}$$

$$x = t\sqrt{3} = 5\sqrt{3} \cdot \sqrt{3} = 15$$



$$y = 2t = 2(5\sqrt{3}) = 10\sqrt{3}$$

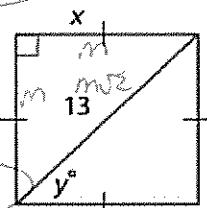
$$x = \frac{13\sqrt{2}}{2}$$

$$y = 45^\circ$$

$$\frac{m\sqrt{2}}{\sqrt{2}} = \frac{13\sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{13\sqrt{2}}{2}$$

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

$$y = 45^\circ$$



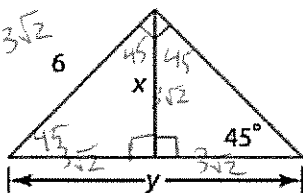
Determine whether the following side lengths make an acute, right, or obtuse triangle. Show proof.

9. 40, 30, 15 obtuse  
 $15^2 + 30^2 < 40^2$   
 $1,125 < 1,600$

10. 17, 15, 13 acute  
 $13^2 + 15^2 > 17^2$   
 $394 > 289$

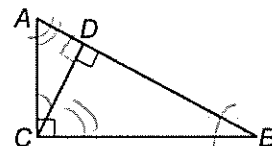
11. Find x and y.

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



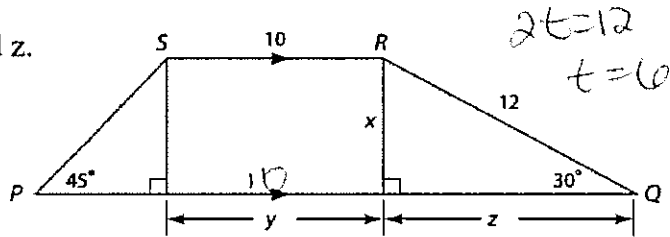
x = 3√2 y = 6√2

12. Complete the similarity statement identifying the three similar triangles in the figure.



12.)  $\triangle ACD \sim \triangle ABC \sim \triangle CBD$

13. Find the value of x, y, and z.



$$x = \underline{6}$$

$$y = \underline{10}$$

$$z = \underline{6\sqrt{3}}$$

14. Find the geometric mean between 8 and 6.

$$\frac{8}{x} = \frac{x}{6}$$

$$x^2 = 48$$

$$x = \pm 4\sqrt{3}$$

*\* Don't forget + and -*

15. Find the geometric mean between  $\frac{2}{21}$  and 9.

$$\frac{9}{x} = \frac{x}{\frac{2}{21}}$$

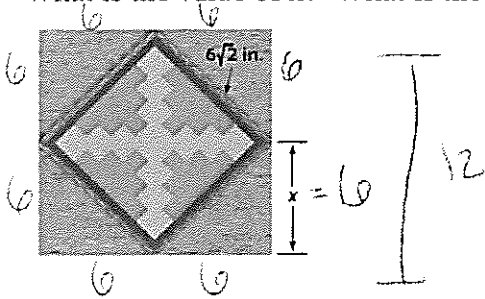
$$x^2 = \frac{18}{21}$$

$$x^2 = \frac{6}{7}$$

$$x = \pm \frac{\sqrt{42}}{7}$$

*Answer*  
 $x = \pm \frac{\sqrt{42}}{7}$

16. The quilt block shown is made up of a square and four isosceles right triangles. What is the value of x? What is the side length of the entire quilt block?



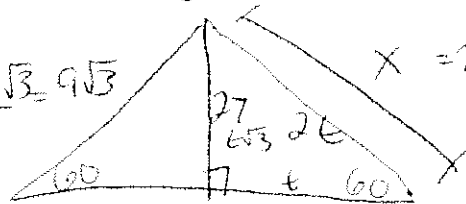
$$x = \underline{6}$$

Side length of entire side =  $\underline{12}$

17. An equilateral triangle has an altitude length of 27 feet. Determine the length of a side of the triangle.

$$t\sqrt{3} = \frac{27}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{27\sqrt{3}}{3} = 9\sqrt{3}$$

$$t = 9\sqrt{3}$$



$$x = 2t = 2(9\sqrt{3}) = 18\sqrt{3}$$

$$\underline{18\sqrt{3}}$$

18. Find the value of x.

$$9^2 + (x-3)^2 = x^2$$

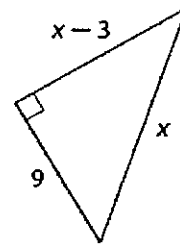
$$81 + x^2 - 6x + 9 = x^2$$

$$90 - 6x = 0$$

$$90 = 6x$$

$$\frac{90}{6} = \frac{6x}{6}$$

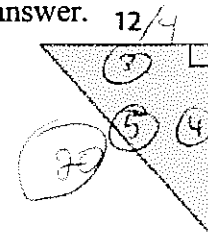
$$x = \underline{15}$$



$$x = \underline{15}$$

19. Find the length of the hypotenuse. Use Pythagorean triple to find your answer.

Pythagorean triple used: 3 4 5



hypotenuse = 20