

Chapter 8 Practice Test Honors Math 2 (Geo)

1. _____

2. Geometric Mean Omit

3. _____

4. $X = 85.44$

5. $12\sqrt{3}$

6. $15\sqrt{2} \approx 21.21$

7. $7\sqrt{3}$

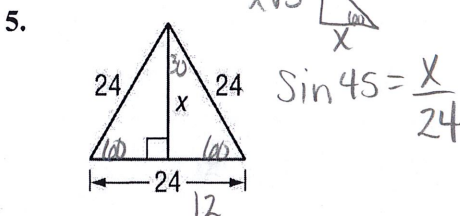
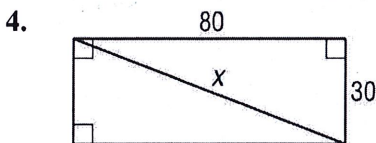
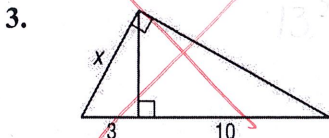
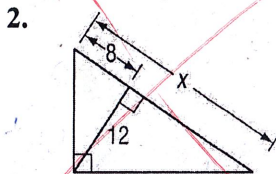
8. $y = 24 \quad x = 12$

9. $X = 8.6$

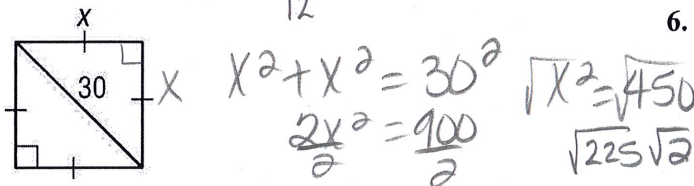
10. 70°

11. $\theta = 67^\circ$

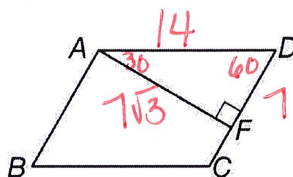
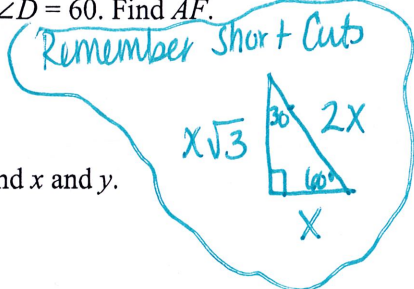
For Questions 2-5, find x.



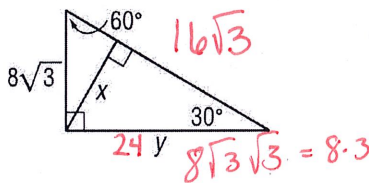
6. Find x.
 $30^2 + 80^2 = x^2$
 $900 + 6400 = x^2$



7. In parallelogram ABCD, AD = 14 and $m\angle D = 60$. Find AF.

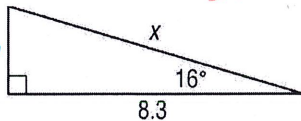


8. Find x and y.



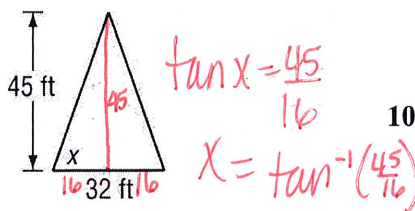
9. Find x to the nearest tenth.

$\cos 16 = \frac{8.3}{x}$ $8.3 = x \cdot \cos 16$



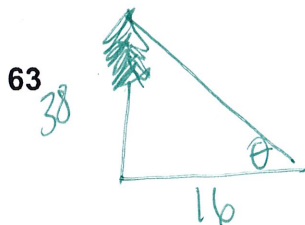
10. An A-frame house is 45 feet high and 32 feet wide. Find the measure of the angle that the roof makes with the floor. Round to the nearest degree.

The angle is 70°



11. A 38-foot tree casts a 16-foot shadow. Find the measure of the angle of elevation of the sun to the nearest degree.

The angle of elevation to sun is 67°



$\tan \theta = \frac{38}{16}$

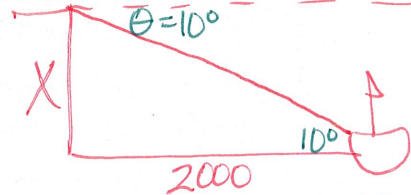
Chapter 8 Test, Form 2D (continued)

12. A boat is 2000 meters from a cliff. If the angle of depression from the top of the cliff to the boat is 10° , how tall is the cliff? Round your answer to the nearest tenth.

$$\tan 10 = \frac{X}{2000}$$

$$X = 2000 \cdot \tan 10$$

$$X = 352.7 \text{ m}$$



12. The cliff is 352.7 m tall.

13. A plane flying at an altitude of 10,000 feet begins descending when the end of the runway is 60,000 feet from a point on the ground directly below the plane. Find the measure of the angle of descent (depression) to the nearest degree.

$$\tan \theta = \frac{10,000}{60,000} \quad \theta = 9.46$$



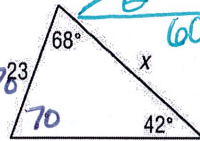
13. The angle of descent is 9.5° .

14. Find x to the nearest tenth.

$$\frac{\sin 42}{23} = \frac{\sin 70}{X}$$

$$X \cdot \sin 42 = 23 \sin 70$$

$$X = 32.3$$



14. 32.3

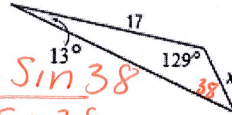
15. Find x to the nearest tenth.

$$\frac{\sin 13}{X} = \frac{\sin 38}{17}$$

$$17 \sin 13 = X \sin 38$$

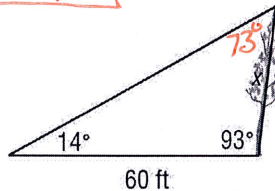
$$\frac{17 \sin 13}{\sin 38} = X$$

$$6.2 = X$$



15. 6.2

16. A tree grew at a 3° slant from the vertical. At a point 60 feet from the tree, the angle of elevation to the top of the tree is 14° . Find the height of the tree to the nearest tenth of a foot.



$$\frac{\sin 73}{60} = \frac{\sin 14}{X}$$

$$X \cdot \sin 73 = 60 \sin 14$$

$$\frac{60 \sin 14}{\sin 73} = X$$

$$X = 15.2$$

16. The tree is 15.2 ft.

17. Find x to the nearest degree.

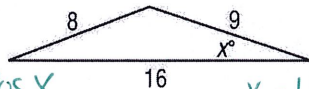
$$8^2 = 9^2 + 16^2 - 2(9)(16) \cos X$$

$$64 = 81 + 256 - 288 \cos X$$

$$64 = 337 - 288 \cos X$$

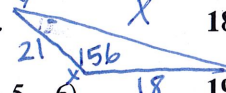
$$.9479 = \cos X$$

$$X = 18.6$$



17. $19^\circ = X$

18. In $\triangle XYZ$, $m\angle X = 156$, $y = 18$, and $z = 21$. Find x to the nearest tenth.



18. $38.2 = X$

19. Find the magnitude and direction of the vector \overrightarrow{PQ} : $P(-2, 4)$ and $Q(-5, -6)$.

$$\text{Mag} = 3^2 + 10^2 = c^2$$

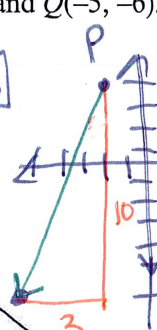
$$109 = c^2 = \sqrt{109}$$

$$\text{mag} = 10.4 \text{ Units}$$

19. 10.4 Units 253° Direction

20. Find the vectors to find $\vec{d} - \vec{f}$.

$$\vec{d} \langle 3, -2 \rangle \quad \vec{f} \langle -5, -6 \rangle$$



$$\langle -5 - (-2), -6 - 4 \rangle = \langle -3, -10 \rangle$$

Component form

20. $\langle 8, 4 \rangle$

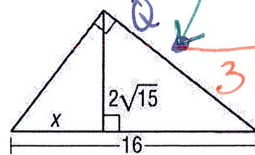
Bonus Find x .

$$x^2 = 21^2 + 18^2 - 2(18)(21) \cos 156^\circ$$

$$x^2 = 441 + 324 - 756 \cos 156^\circ$$

$$x^2 = 765 - 756 \cos 156^\circ$$

$$\sqrt{x^2} = \sqrt{1455.64} \quad x =$$



$$\langle 3, -2 \rangle - \langle -5, -6 \rangle$$

B: _____