

Geometry

Unit Two – G.SRT.9-11 Review #1 (IC/HW33)

For each multiple choice question, please circle your answer.

Name: _____

Date: _____ Period: _____

Determine whether the following are (T) rue or (F)alse.

1. When labeling a triangle the convention is to label the side opposite $\angle A$, side a.

T or F

2. In a triangle, there will always be three heights.

T or F

3. The altitude or height of the triangle will always be inside the triangle.

T or F

4. $\sin 23^\circ = \sin 157^\circ$

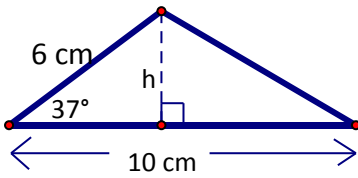
T or F

5. $\cos 35^\circ = \sin 55^\circ$

T or F

6. Determine the heights of the given triangles.

a)

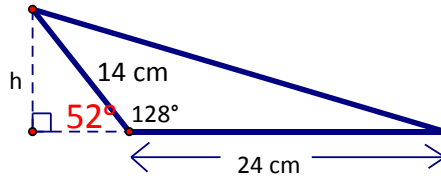


$$\sin 37 = \frac{h}{6}$$

$$h = 6 \sin 37$$

$$h \approx 3.61 \text{ cm}$$

b)



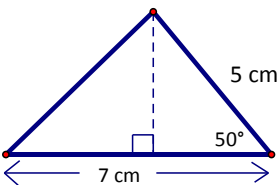
$$\sin 52 = \frac{h}{14}$$

$$h = 14 \sin 52$$

$$h \approx 11.03 \text{ cm}$$

7. Determine the area of the given triangles.

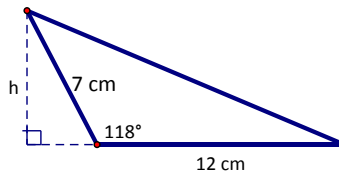
a)



$$\text{Area} = \frac{1}{2}(5)(7)\sin 50$$

$$\text{Area} \approx 13.41 \text{ cm}^2$$

b)



$$\text{Area} = \frac{1}{2}(7)(12)\sin 118$$

$$\text{Area} \approx 37.08 \text{ cm}^2$$

8. Determine the missing angle that makes the equation true. (some new... some review)

a) $\sin 56^\circ = \sin$ 124°

b) $\sin 12^\circ = \cos$ 78°

c) $\sin 123^\circ = \sin$ 57°

9. Given $m\angle A = 110^\circ$, $m\angle B = 45^\circ$, and $a = 10$, what is the value of b to the nearest unit?

a) 7

b) 8

c) 12

d) 14

$$\frac{\sin 110}{10} = \frac{\sin 45}{b}$$

$$b = \frac{10 \sin 45}{\sin 110}$$

10. Given $m\angle A = 42^\circ$, $a = 22$, and $b = 12$, what is $m\angle B$ to the nearest degree?

a) 0.4°

b) 12°

c) 21°

d) 66°

$$\frac{\sin 42}{22} = \frac{\sin B}{12}$$

$$\sin B = \frac{12 \sin 42}{22}$$

$$B = \sin^{-1}\left(\frac{12 \sin 42}{22}\right)$$

11. Given $m\angle A = 120^\circ$, $b = 3$, and $c = 10$, what is the value of a to the nearest unit?

a) 8

b) 9

c) 10

d) 12

$$a^2 = 3^2 + 10^2 - 2(3)(10)\cos 120$$

$$a \approx 11.79$$

12. Given $a = 5$, $b = 7$, and $c = 10$, what is $m\angle A$ to the nearest degree?

a) 28°

b) 62°

c) 81°

d) 85°

$$5^2 = 7^2 + 10^2 - 2(7)(10)\cos A$$

$$-124 = -140\cos A$$

$$A = \cos^{-1}\left(\frac{124}{140}\right)$$

13. A ranger in an observation tower sights a bear 15 miles due north and campers 19 miles to the southeast. If the angle between the two lines of sight is 104° , how far is the bear from the campers, to the nearest mile?

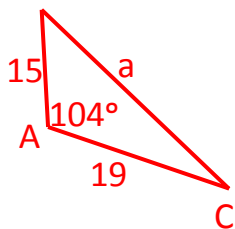
B

a) 6 miles

b) 21 miles

c) 27 miles

d) 33 miles



$$a^2 = 15^2 + 19^2 - 2(15)(19)\cos 104$$

$$a \approx 27$$

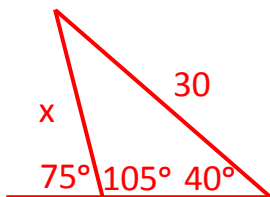
14. A 30-foot guy wire tied to the top of a pole makes a 40° angle with the ground. If the pole is tilted away from the guy wire and makes a 75° angle with the ground, what is the length of the pole, to the nearest foot?

a) 19 feet

b) 20 feet

c) 45 feet

d) 89 feet



$$\frac{\sin 105}{30} = \frac{\sin 40}{x}$$

$$x = \frac{30 \sin 40}{\sin 105}$$