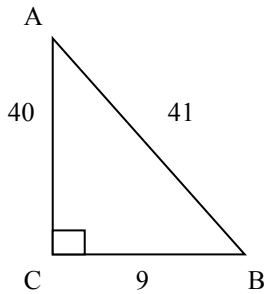


Trigonometry – Sine, Cosine, and Tangent

Hw Section 9.1

Name _____

Write a trigonometric function that corresponds to each pair of numbers and the given angle.



#1) 9, 40, $\angle A$

$$\tan(m\angle A) = \frac{9}{40}$$

#2) 9, 41, $\angle A$

$$\sin(m\angle A) = \frac{9}{41}$$

#3) 40, 41, $\angle A$

$$\cos(m\angle A) = \frac{40}{41}$$

#4) 9, 40, $\angle B$

$$\tan(m\angle B) = \frac{40}{9}$$

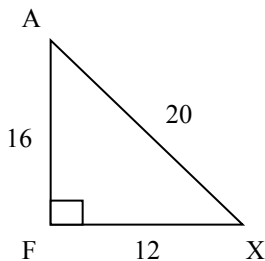
#5) 9, 41, $\angle B$

$$\cos(m\angle B) = \frac{9}{41}$$

#6) 40, 41, $\angle B$

$$\sin(m\angle B) = \frac{40}{41}$$

Write an equation using the indicated trig ratio.



#7) $\sin A$

$$\sin(m\angle A) = \frac{12}{20}$$

#8) $\cos A$

$$\cos(m\angle A) = \frac{16}{20}$$

#9) $\tan A$

$$\tan(m\angle A) = \frac{12}{16}$$

#10) $\sin X$

$$\sin(m\angle X) = \frac{16}{20}$$

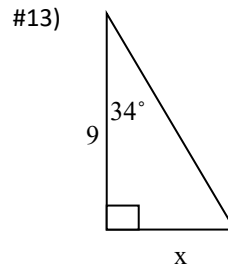
#11) $\cos X$

$$\cos(m\angle X) = \frac{12}{20}$$

#12) $\tan X$

$$\tan(m\angle X) = \frac{16}{12}$$

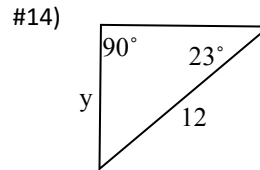
Find the value of x. Round measures of segments to the nearest tenth and angle measures to the nearest degree



$$\tan(34^\circ) = \frac{x}{9}$$

$$9 \tan(34^\circ) = x$$

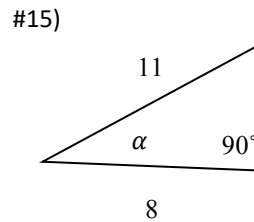
$$6.1 \approx x$$



$$\sin(23^\circ) = \frac{y}{12}$$

$$12 \sin(23^\circ) = y$$

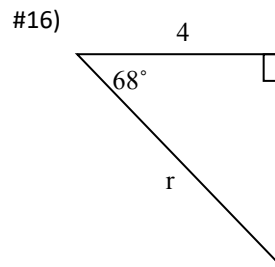
$$4.7 \approx y$$



$$\cos \alpha = \frac{8}{11}$$

$$\alpha = \cos^{-1}\left(\frac{8}{11}\right)$$

$$\alpha \approx 43^\circ$$

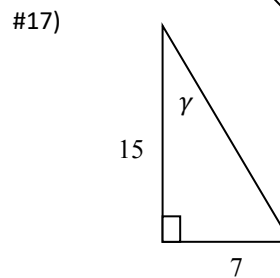


$$\cos(68^\circ) = \frac{4}{r}$$

$$r \cdot \cos(68^\circ) = 4$$

$$r = \frac{4}{\cos(68^\circ)}$$

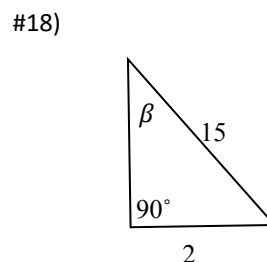
$$r \approx 10.7$$



$$\tan(\gamma) = \frac{7}{15}$$

$$\gamma = \tan^{-1}\left(\frac{7}{15}\right)$$

$$\gamma \approx 25^\circ$$



$$\sin(\beta) = \frac{2}{15}$$

$$\beta = \sin^{-1}\left(\frac{2}{15}\right)$$

$$\beta \approx 8^\circ$$

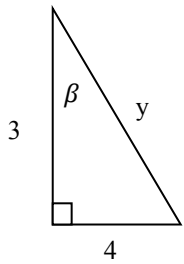
Trigonometry – Sine, Cosine, and Tangent

Hw Section 9.1

Name _____

Find the value of the variables. Round measures of segments to the nearest tenth and angle measures to the nearest degree.

#19)



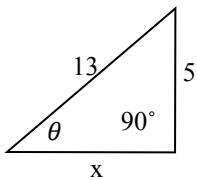
Pythagorean Triple 3-4-5
y = 5

$$\tan(\beta) = \frac{4}{3}$$

$$\beta = \tan^{-1}\left(\frac{4}{3}\right)$$

$$\beta \approx 53^\circ$$

#20)



$$\sin(\theta) = \frac{5}{13}$$

$$\theta = \sin^{-1}\left(\frac{5}{13}\right)$$

$$\theta \approx 23^\circ$$

$$x^2 + y^2 = r^2$$

$$x^2 + 5^2 = 13^2$$

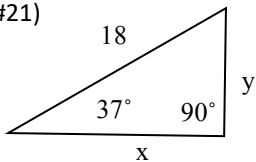
$$x^2 + 25 = 169$$

$$x^2 = 144$$

$$x = \pm 12$$

$$x = 12$$

#21)



$$\sin(37^\circ) = \frac{y}{18}$$

$$18 \sin(37^\circ) = y$$

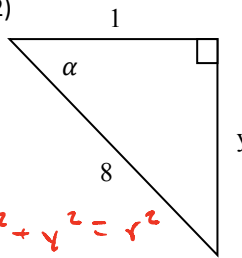
$$10.8 \approx y$$

$$\cos(37^\circ) = \frac{x}{18}$$

$$18 \cos(37^\circ) = x$$

$$14.4 \approx x$$

#22)



$$\cos(\alpha) = \frac{1}{8}$$

$$\alpha = \cos^{-1}\left(\frac{1}{8}\right)$$

$$\alpha \approx 83^\circ$$

$$x^2 + y^2 = r^2$$

$$(1)^2 + y^2 = (8)^2$$

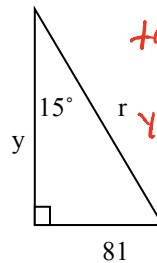
$$1 + y^2 = 64$$

$$y^2 = 63$$

$$y = \pm\sqrt{63}$$

$$y = \sqrt{63}$$

#23)



$$\tan(15^\circ) = \frac{81}{y}$$

$$\sin(15^\circ) = \frac{81}{r}$$

$$r \sin(15^\circ) = 81$$

$$r = \frac{81}{\sin(15^\circ)}$$

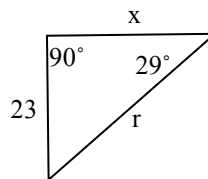
$$r \approx 313.0$$

$$y \tan(15^\circ) = 81$$

$$y = \frac{81}{\tan(15^\circ)}$$

$$y \approx 302.3$$

#24)



$$\tan(29^\circ) = \frac{23}{x}$$

$$\sin(29^\circ) = \frac{23}{r}$$

$$r \sin(29^\circ) = 23$$

$$x \tan(29^\circ) = 23$$

$$x = \frac{23}{\tan(29^\circ)}$$

$$r = \frac{23}{\sin(29^\circ)}$$

$$x \approx 41.5$$

$$r \approx 47.4$$