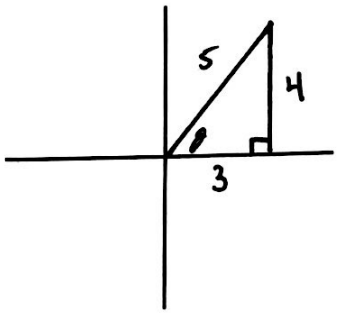
Algebra 2
Chapter 13 – Trigonometry
13.1 – 13.3 REVIEW

Name: KEY

Date: _____ Per: _____

Find the values of the six simplified trigonometric functions of angle θ.

1.) Point $(3, 4)$



$(3)^2 + (4)^2 = c^2$

$9 + 16 = c^2$

$25 = c^2$

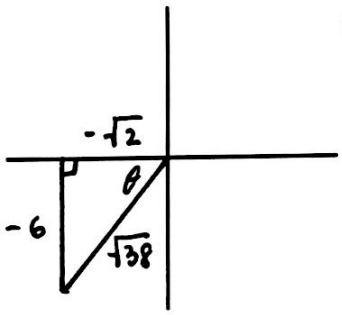
$5 = c$

$\sin\theta = \frac{4}{5}$ $\quad \csc\theta = \frac{5}{4}$

$\cos\theta = \frac{3}{5}$ $\quad \sec\theta = \frac{5}{3}$

$\tan\theta = \frac{4}{3}$ $\quad \cot\theta = \frac{3}{4}$

2.) Point $(-\sqrt{2}, -6)$



$(-\sqrt{2})^2 + (-6)^2 = c^2$

$2 + 36 = c^2$

$38 = c^2$

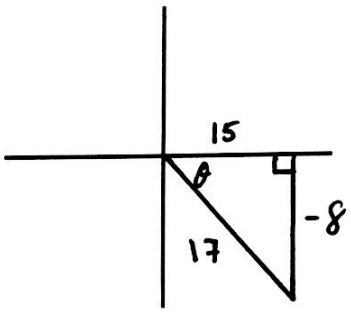
$c = \sqrt{38}$

$\sin\theta = \frac{-6}{\sqrt{38}} = \frac{-6\sqrt{38}}{38} = \frac{-3\sqrt{38}}{19}$ $\quad \csc\theta = \frac{\sqrt{38}}{-6}$

$\cos\theta = \frac{-\sqrt{2}}{\sqrt{38}} = \frac{-1}{\sqrt{19}} = \frac{-\sqrt{19}}{19}$ $\quad \sec\theta = -\sqrt{19}$

$\tan\theta = \frac{6}{\sqrt{2}} = \frac{6\sqrt{2}}{2} = 3\sqrt{2}$ $\quad \cot\theta = \frac{\sqrt{2}}{6}$

3.) Point $(15, -8)$



$(15)^2 + (-8)^2 = c^2$

$225 + 64 = c^2$

$289 = c^2$

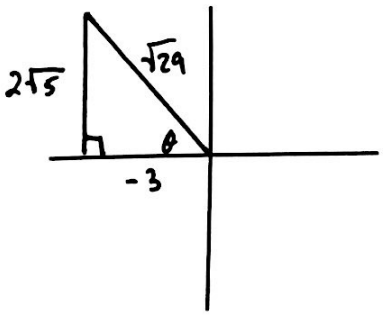
$17 = c$

$\sin\theta = \frac{-8}{17}$ $\quad \csc\theta = \frac{17}{-8}$

$\cos\theta = \frac{15}{17}$ $\quad \sec\theta = \frac{17}{15}$

$\tan\theta = \frac{-8}{15}$ $\quad \cot\theta = \frac{15}{-8}$

4.) Point $(-3, 2\sqrt{5})$



$(-3)^2 + (2\sqrt{5})^2 = c^2$

$9 + 20 = c^2$

$29 = c^2$

$c = \sqrt{29}$

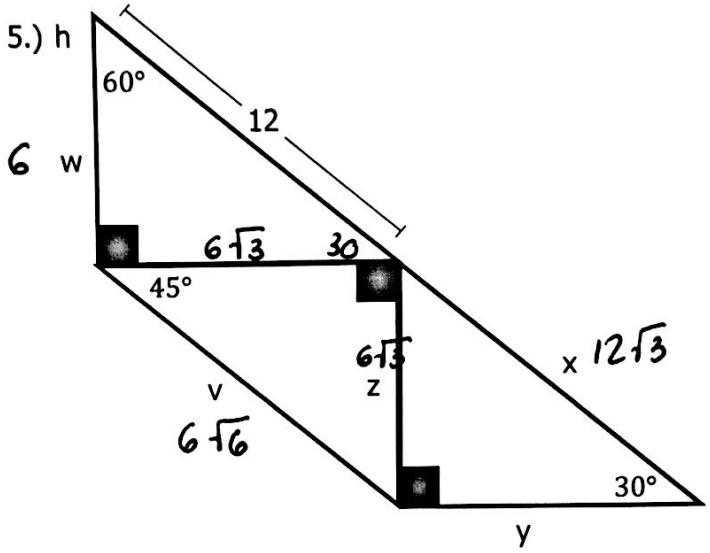
$\sin\theta = \frac{2\sqrt{5}}{\sqrt{29}} = \frac{2\sqrt{145}}{29}$ $\quad \csc\theta = \frac{\sqrt{29}}{2\sqrt{5}} = \frac{\sqrt{145}}{10}$

$\cos\theta = \frac{-3}{\sqrt{29}} = \frac{-3\sqrt{29}}{29}$ $\quad \sec\theta = \frac{\sqrt{29}}{-3}$

$\tan\theta = \frac{2\sqrt{5}}{-3}$ $\quad \cot\theta = \frac{-3}{2\sqrt{5}} = \frac{-3\sqrt{5}}{10}$

Find the value(s) of the missing sides of the special right triangle.

5.) h



v = $6\sqrt{6}$

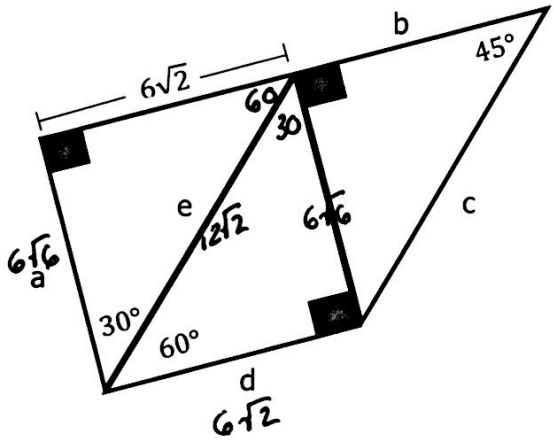
w = 6

x = $12\sqrt{3}$

y = 18

z = $6\sqrt{3}$

6.)



a = $6\sqrt{6}$

b = $6\sqrt{6}$

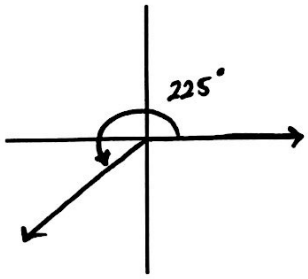
c = $6\sqrt{12} = 12\sqrt{3}$

d = $6\sqrt{2}$

e = $12\sqrt{2}$

7.) Consider the angle θ in standard position such that $\theta = 225°$. Draw the angle, and find each of the following.

A.)



B.) The quadrant in which θ terminates III

C.) The reference angle for θ 45°

D.) A positive angle coterminal with θ 585°
225 + 360 =

E.) A negative angle coterminal with θ -135°
225 - 360 =

F.) An angle with the same reference angle as θ in...

1.) Q1: 45°

2.) Q2: 135°

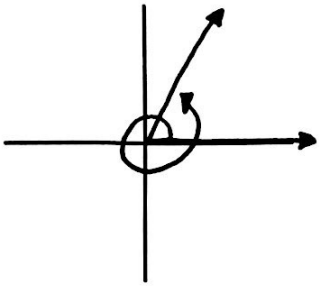
3.) Q3: 225°

4.) Q4: 315°

8.) Consider the angle θ in standard position such that $\theta = 430°$. Draw the angle, and find each of the following.

$430 - 360 = 70°$

A.)



B.) The quadrant in which θ terminates I

C.) The reference angle for θ 70°

D.) A positive angle coterminal with θ 790°
$430 + 360 =$

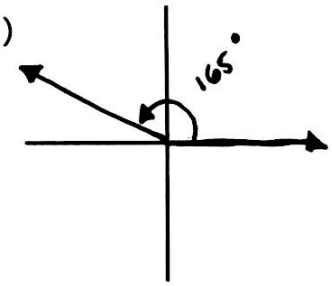
E.) A negative angle coterminal with θ -290
$430 - 360 - 360 =$

F.) An angle with the same reference angle as θ in...

1.) Q1: 70° 2.) Q2: 110° 3.) Q3: 250° 4.) Q4: 290°

9.) Consider the angle θ in standard position such that $\theta = 165°$. Draw the angle, and find each of the following.

A.)



B.) The quadrant in which θ terminates II

C.) The reference angle for θ 15°

D.) A positive angle coterminal with θ 495°
$165 + 360 =$

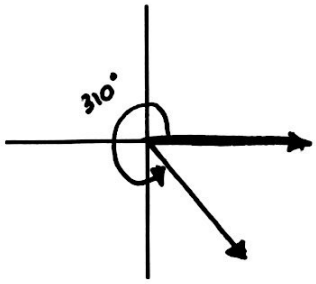
E.) A negative angle coterminal with θ -195
$165 - 360 =$

F.) An angle with the same reference angle as θ in...

1.) Q1: 15° 2.) Q2: 165° 3.) Q3: 195° 4.) Q4: 345°

10.) Consider the angle θ in standard position such that $\theta = 310°$. Draw the angle, and find each of the following.

A.)



B.) The quadrant in which θ terminates IV

C.) The reference angle for θ 50°

D.) A positive angle coterminal with θ 670°
$310 + 360 =$

E.) A negative angle coterminal with θ -50°
$310 - 360 = -50°$

F.) An angle with the same reference angle as θ in...

1.) Q1: 50° 2.) Q2: 130° 3.) Q3: 230° 4.) Q4: 310°