

Name Answer key  
 Ms. Schmidt

Date \_\_\_\_\_

Pre-Calculus

Test 9 Review Answer Sheet

1a)

$$\csc \theta > 0$$

(Sine) +

S	A
T	C

I and II

1b)

$$\sin \theta < 0$$

+

$$\tan \theta > 0$$

S	A
T	C

III

1c)

$$\csc \theta > 0 + \cos \theta < 0$$

(Sine)

S	A
T	C

II

2a)

$$220, \frac{\pi}{180}$$

$$\downarrow$$

$$\frac{220\pi}{180}$$

$$\frac{11\pi}{9}$$

2b)

$$585, \frac{\pi}{180}$$

$$\downarrow$$

$$\frac{585\pi}{180}$$

$$\frac{13\pi}{4}$$

3a)

$$-\frac{3\pi}{4} \cdot \frac{180}{\pi}$$

↓

$$-\frac{3 \cdot 180}{4}$$

$$-135^\circ$$

3b)

$$\frac{\pi}{8} \cdot \frac{180}{\pi}$$

$$\frac{180}{8}$$

$$22.5^\circ$$

4)

$$\sec(x-4) = \csc(5x+10)$$

co functions!

$$(x-4) + (5x+10) = 90$$

$$6x + 6 = 90$$

$$6x = 84$$

$$x = 14$$

5)

$$\tan(4x) = \cot(5x)$$

co functions!

$$4x + 5x = 90$$

$$9x = 90$$

$$x = 10$$

6a)

Complement

$$\frac{\pi}{2} - \frac{2\pi}{11} =$$

$$\frac{7\pi}{22}$$

Supplement

$$\pi - \frac{2\pi}{11}$$

$$\frac{9\pi}{11}$$

6b)

Complement

$$\frac{\pi}{2} - \frac{23\pi}{36}$$

$$-\frac{5\pi}{36}$$

DNE

Supplement

$$\pi - \frac{23\pi}{36}$$

$$\frac{13\pi}{36}$$

7)

$$-415^\circ$$

+ Coterminal

$$-415 + 360 + 360 = 305^\circ$$

- Coterminal

$$-415 + 360 = -55^\circ$$

or

$$-415 - 360 = -775^\circ$$

8)

$$\sin 295^\circ$$

Q: IV

$$R: 360 - 295 = 65$$

F: Sin

S: -

$$-\sin 65^\circ$$

9)

$$\left(\frac{3}{5}, -\frac{4}{5}\right) (\cos \theta, \sin \theta)$$

$\nearrow$   
cos  $\theta$

$\nwarrow$   
sin  $\theta$

$$\cos \theta = 3/5$$

$$\sin \theta = -4/5$$

$$\tan \theta = \frac{-\frac{4}{5}}{\frac{3}{5}} \rightarrow \frac{-4}{5} \cdot \frac{5}{3} = -\frac{4}{3}$$

10)

$$(2x + y^2)^5$$

$$5C_5 (2x)^5 (y^2)^0 = (1)(32x^5)(1)$$

$$5C_4 (2x)^4 (y^2)^1 = (5)(16x^4)(y^2)$$

$$5C_3 (2x)^3 (y^2)^2 = (10)(8x^3)(y^4)$$

$$5C_2 (2x)^2 (y^2)^3 = (10)(4x^2)(y^6)$$

$$5C_1 (2x)^1 (y^2)^4 = (5)(2x)(y^8)$$

$$5C_0 (2x)^0 (y^2)^5 = (1)(1)(y^{10})$$

$$32x^5 + 80x^4y^2 + 80x^3y^4 + 40x^2y^6 + 10xy^8 + y^{10}$$

11)

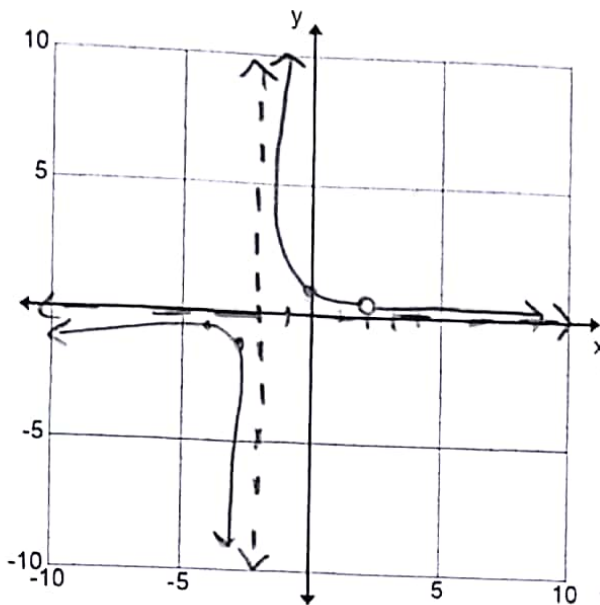
$$3x^3 - 81 \quad \swarrow \text{SOAP}$$

$$3(x^3 - 27)$$

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

12)

$$f(x) = \frac{x-2}{x^2-4} = \frac{\cancel{x-2}}{(x+2)(\cancel{x-2})} = \frac{1}{x+2}$$



hole  $x-2=0 \quad x=2$   
 $f(2) = \frac{1}{2+2} = \frac{1}{4} \quad (2, \frac{1}{4})$

VA  $\rightarrow x+2=0$   
 $x=-2$

HA  $\rightarrow \frac{x}{x^2} \quad 1 < 2 \quad y=0$

x-int

$$\frac{1}{x+2} = 0$$

$$0 = 1$$

DNE

y-int

$$\frac{1}{0+2} = \frac{1}{2}$$

$$(0, \frac{1}{2})$$

SA  $\rightarrow$  DNE

$$f(-3) = \frac{-3-2}{(-3)^2-4} = \frac{-5}{5} = -1$$

$$f(-4) = \frac{-4-2}{(-4)^2-4} = \frac{-6}{12} = -\frac{1}{2}$$

Domain  $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$