

Practice test 2

Name \_\_\_\_\_

**Use the given conditions to write an equation for the line in the indicated form.**

1) Passing through (4, 3) and parallel to the line whose equation is  $y = 2x - 6$ ;  
point-slope form

2) Passing through (2, 5) and perpendicular to the line whose equation is  $y = \frac{1}{6}x + 8$ ;  
slope-intercept form

**Find the vertex and axis of symmetry of the graph of the function.**

3)  $f(x) = -x^2 - 6x + 5$

**Determine the domain and the range of the function.**

4)  $f(x) = x^2 + 2x - 8$

**Determine, without graphing, whether the given quadratic function has a maximum value or a minimum value and then find that value.**

5)  $f(x) = -x^2 - 2x - 6$

**Determine the constant that should be added to the binomial so that it becomes a perfect square trinomial. Then write and factor the trinomial.**

6)  $x^2 + \frac{1}{6}x$

**Solve the equation by completing the square.**

7)  $x^2 + 8x + 7 = 0$

**Solve the equation using the quadratic formula.**

8)  $x^2 + 3x - 40 = 0$

**Solve the radical equation, and check all proposed solutions.**

9)  $\sqrt{x+6} + \sqrt{2-x} = 4$

10)  $x - \sqrt{3x-2} = 4$

**Convert the angle to a decimal in degrees. Round the answer to two decimal places.**

11)  $55^\circ 54' 33''$

**Convert the angle to D° M' S'' form. Round the answer to the nearest second.**

12)  $96.66^\circ$

If  $s$  denotes the length of the arc of a circle of radius  $r$  subtended by a central angle  $\theta$ , find the missing quantity.

13)  $r = \frac{1}{2}$  feet,  $s = 8$  feet,  $\theta = ?$

Convert the angle in degrees to radians. Express the answer as multiple of  $\pi$ .

14)  $144^\circ$

15)  $87^\circ$

Convert the angle in radians to degrees.

16)  $-\frac{11\pi}{6}$

17)  $\frac{11\pi}{4}$

Convert the angle in degrees to radians. Express the answer in decimal form, rounded to two decimal places.

18)  $12^\circ$

In the problem,  $t$  is a real number and  $P = (x, y)$  is the point on the unit circle that corresponds to  $t$ . Find the exact value of the indicated trigonometric function of  $t$ .

19)  $(\frac{4}{9}, \frac{\sqrt{65}}{9})$  Find  $\sin t$ .

20)  $(\frac{3}{8}, \frac{\sqrt{55}}{8})$  Find  $\tan t$ .

21)  $(-\frac{\sqrt{33}}{7}, \frac{4}{7})$  Find  $\cot t$ .

Find the exact value. Do not use a calculator.

22)  $\csc(-\frac{\pi}{2})$

23)  $\cos 2\pi$

24)  $\sec \frac{19\pi}{4}$

25)  $\cos \frac{10\pi}{3}$

26)  $\sec \frac{\pi}{4}$

27)  $\sec 30^\circ$

28)  $\sec \frac{\pi}{6}$

**Find the exact value of the expression. Do not use a calculator.**

29)  $\cot \frac{\pi}{3} - \sin \frac{\pi}{3}$

**Find the exact value. Do not use a calculator.**

30)  $\cos \frac{16\pi}{3}$

31)  $\sin 765^\circ$

## Answer Key

### Testname: PRACTICE TEST 2

1)  $y - 3 = 2(x - 4)$

2)  $y = -6x + 17$

3)  $(-3, 14); x = -3$

4) domain: all real numbers

range:  $\{y \mid y \geq -9\}$

5) maximum;  $-5$

6)  $\frac{1}{144}; x^2 + \frac{1}{6}x + \frac{1}{144} = \left(x + \frac{1}{12}\right)^2$

7)  $\{-7, -1\}$

8)  $\{-8, 5\}$

9)  $\{-2\}$

10)  $\{9\}$

11)  $55.91^\circ$

12)  $96^\circ 39' 36''$

13) 16 radians

14)  $\frac{4\pi}{5}$

15)  $\frac{29\pi}{60}$

16)  $-330^\circ$

17)  $495^\circ$

18) 0.21

19)  $\frac{\sqrt{65}}{9}$

20)  $\frac{\sqrt{55}}{3}$

21)  $-\frac{\sqrt{33}}{4}$

22)  $-1$

23) 1

24)  $-\sqrt{2}$

25)  $-\frac{1}{2}$

26)  $\sqrt{2}$

27)  $\frac{2\sqrt{3}}{3}$

28)  $\frac{2\sqrt{3}}{3}$

29)  $-\frac{\sqrt{3}}{6}$

30)  $-\frac{1}{2}$

31)  $\frac{\sqrt{2}}{2}$