

Name: _____

Math 108P

PART 1: True or False (2 points each)

State whether the given statements are True or False. Mark your answers on the given scantron. Mark a for True and b for False.

1) $5[3 + 2(2 + 6)] \leq 100$ True or False: _____

2) $9(7x + 4) = 8(8x - 7)$ is an expression. True or False: _____

3) $(x - 4)^3 = x^3 - 64$. True or False: _____

4) The additive inverse of -23 is 23 . True or False: _____

5) $20a^8$ and $20a^6$ are like terms. True or False: _____

6) $distance = rate \cdot time$. True or False: _____

7) The domain and range of a linear function is $(-\infty, \infty)$. True or False: _____

8) $(-4, 2)$ is a solution to the system below. True or False: _____

$$x + y = -2$$

$$x - y = 6$$

9) $\{(9, 0), (8, 0), (1, 3)\}$ is a function. True or False: _____

10) $-|-13| \geq -|-14|$. True or False: _____

PART 2: Multiple Choice (2 points each)

Select the correct answer from the choices provided. Mark your answers on the scantron provided.

11) Find the value of $\frac{6(8+4)+6\cdot6}{6(5-1)}$. _____

a) $\frac{24}{29}$

b) $\frac{1}{7}$

c) $\frac{9}{2}$

d) $\frac{13}{4}$

12) Change the word statement to an equation. "The sum of twice a number and 11 is 110." _____

a) $22x = 110$

b) $2x + 11 = 110$

c) $22x = 110x$

d) $2(x + 11) = 110$

13) Evaluate $\frac{3a^2-y}{x+2}$ for $x = -2$, $y = 3$, and $a = -4$. _____

a) $-\frac{51}{4}$

b) $\frac{45}{4}$

c) 0

d) undefined

14) Solve $-4(x + 7) + 9x = 5(x + 5) + 9$. _____

a) 0

b) \emptyset

c) 3

d) all real numbers

15) A rectangular carpet has a perimeter of 208 inches. The length of the carpet is 24 inches more than the width. What are the dimensions of the carpet? _____

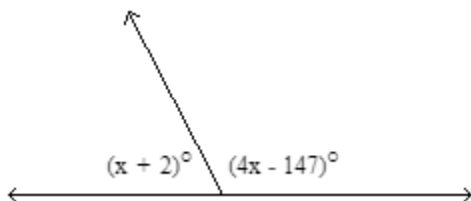
a) 64 in by 88 in

b) 80 in by 104 in

c) 92 in by 116 in

d) 40 in by 64 in

16) Find the measure of the two angles shown below. _____



a) 65° and 13°

b) 65° and 113°

c) 67° and 13°

d) 67° and 113°

17) Solve $-7x + 2y = 9$ for y . _____

- a) $y = \frac{7}{2}x + \frac{9}{2}$ b) $y = -\frac{7}{2}x + \frac{9}{2}$ c) $y = \frac{7}{2}x + 9$ d) $y = -\frac{7}{2}x + 9$

18) 85 is what percent of 1780? _____

- a) 20.9% b) 209.4% c) 2094.1% d) 4.8%

19) Complete the ordered pair (, -27) for $y = -5x - 27$. _____

- a) (-7, -27) b) (0, -27) c) (-135, -27) d) (5, -27)

20) Determine whether the two lines are parallel, perpendicular, or neither. _____

$$6x + 2y = 8$$

$$27x + 9y = 39$$

- a) parallel b) perpendicular c) neither

21) Write an equation for the line through (-1,0) with an undefined slope. _____

- a) $x = -1$ b) $x = 0$ c) $y = -1$ d) $y = 0$

22) Without graphing, is the graph of the equations below that of intersecting lines, parallel lines, or one line? _____

$$y + 3 = 3x$$

$$6x - 2y = 3$$

- a) intersecting lines b) parallel lines c) one line

23) Is $4.7x^2 + 0.3x + x^2 - x - 2x^2$ a monomial, binomial, trinomial, or neither? _____

- a) monomial b) binomial c) trinomial d) neither

24) Simplify $(7x^4 + 6x^6 + 6 - 3x^5) - (-4 + 7x^5 + 9x^6 + 2x^4)$. _____

a) $-3x^6 + 4x^5 + 9x^4 + 2$

b) $-3x^6 - 10x^5 + 5x^4 + 10$

c) $15x^6 + 4x^5 + 9x^4 + 2$

d) $15x^6 + 4x^5 + 9x^4 + 10$

25) Find the product of $-4x^3(-7x - 12)$. _____

a) $28x^4 - 12$

b) $28x^4 + 48x^3$

c) $76x^3$

d) $28x + 48$

26) Perform the division $\frac{-20x^8 - 32x^6 - 16x^4}{-4x^6}$. _____

a) $5x + 8 + \frac{4}{4x^2}$

b) $5x + 8 + \frac{4}{x}$

c) $5x^2 + 8 + \frac{4}{x^2}$

d) $5x^2 + 8 + \frac{4}{x}$

27) Evaluate $12^0 + 12^0$. _____

a) 1

b) 24

c) 0

d) 2

PART 3: Fill in the blank. (2 points for each blank)

Answer each question in the blank provided below.

For questions 28-32, consider the set of real numbers $\{-17, -\sqrt{5}, -\frac{25}{19}, 0, 0.331, 1, \frac{\pi}{2}\}$, list the numbers that are:

28) natural numbers Answer: _____

29) whole numbers Answer: _____

30) integers Answer: _____

31) rational numbers Answer: _____

32) irrational numbers Answer: _____

33) Let $f(x) = -5x + 8$. Find $f(4c + 13)$. Answer: _____

34) Which **size** is the best buy for vegetable oil?

Answer: _____

Size	Price
16 oz	\$1.59
32 oz	\$2.62
64 oz	\$3.75
128 oz	\$7.88

35) Use the commutative property to rewrite $6(x + 4)$.

Answer: _____

36) Use the associative property to rewrite $4 + (a + 11)$.

Answer: _____

37) Use the distributive property to rewrite $20(x + y)$.

Answer: _____

38) Find the domain of $\{(9, -1), (8,0), (1,3), (5,2), (4,8)\}$.

Answer: {_____}

39) Find the range of $\{(9, -1), (8,0), (1,3), (5,2), (4,8)\}$.

Answer: {_____}

40) Write $(-4x)(-4x)(-4x)(-4x)$ using exponents.

Answer: _____

PART 4: Open-ended (5 points each)

Show all of your work for full credit below each question. Circle your final answer.

41) Simplify the exponential expression. Assume all variables represent positive real numbers. Answer with positive exponents.

$$\left(\frac{3p^{-3}v^2}{s^{-4}}\right)^3$$

42) Simplify the exponential expression. Assume all variables represent positive real numbers.

$$(2x^2y^2z)^3(x^3y)^5$$

43) Perform the operation.

$$(7y - 9)(49y^2 + 63y + 81)$$

44) Perform the operation.

$$3x^2(x - 2)(x - 11)$$

45) Perform the operation.

$$(x - 10)^2$$

46) Perform the division.

$$\frac{8m^3 + 28m^2 - 11m + 20}{m + 4}$$

47) Perform the operation.

$$\frac{-10(-6) - (-8)(-4)}{-6(2) - 2(-2)}$$

48) Solve the equation.

$$\frac{5}{7}w = \frac{3}{7}$$

49) Solve the equation.

$$7x - (2x - 1) = 2$$

50) Solve the equation.

$$\frac{2}{5}x - \frac{1}{3}x = 2$$

51) Solve the equation.

$$-0.05(80) + 0.7x = 0.3(80 + x)$$

52) Solve the equation.

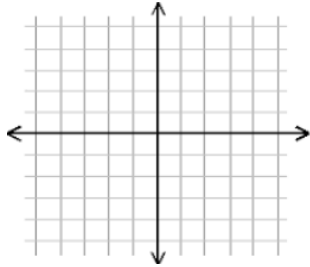
$$\frac{2}{7x} = \frac{6}{3x + 4}$$

53) If three times the smaller of two consecutive integers is added to four times the larger, the result is 88. Find the integers.

54) Complete the ordered pairs. Then graph the equation by plotting the points.

$$3x = y + 3$$

(0,), (, 0), (2,)



55) Find the intercepts of $-2x + 2y = 2$.

56) Solve the linear inequality. Express the answer in interval notation. Graph the solution set.

$$20x - 40 < 5(3x - 2)$$



57) Solve the linear inequality. Express the answer in interval notation. Graph the solution set.

$$-5(x + 9) + 33x \geq 5(6x - 3) - 3x$$



58) Solve the linear inequality. Express the answer in interval notation. Graph the solution set.

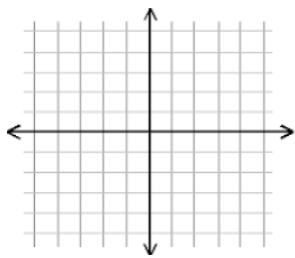
$$-9 < 4x + 3 \leq 7$$



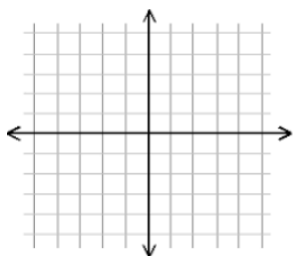
59) Graph the equation $-4x + y = -3$ by finding the slope and y-intercept.

Slope: _____

y-intercept: _____



60) Graph the equation $y + 4 = 0$.



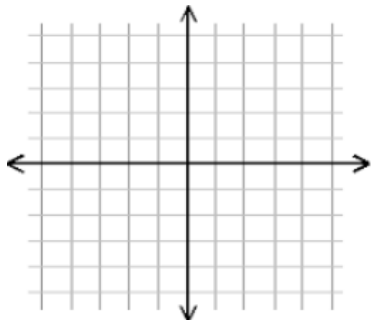
61) Find the equation of a line passing through $(0,2)$ that is perpendicular to the line whose equation is $-7x - 8y = 42$. Express your answer in slope-intercept form.

62) Find the equation of a line passing through $(-4, -3)$ and $(2, -8)$. Express your answer in point-slope form, slope-intercept form, and standard form.

63) Solve the system of equations by graphing.

$$x - 3y = 9$$

$$x + 3y = -3$$



64) Solve the system of linear equations by elimination or substitution.

$$x - 6y = 15$$

$$-7x - 7y = -7$$