



# Success Center Practice Sheet

## Math 95 Review

### Evaluate.

1)  $(4)(-3) + 16 \div (4 + 4)$

2)  $12 \div 3(2) + |-1| - 5$

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

### Insert $<$ , $>$ , or $=$ in the appropriate space to make each statement true.

4) a.  $-3$       $-7$                       b.  $2$       $|-3|$                       c.  $|-2|$       $-1 - (-3)$

### Simplify.

5)  $4a - b - 6a + 3 - 2b$

6)  $3x^3 - 2x^2 - 7x^3 - 4x^2$

7)  $-4 + 2x + 10 + 3x - 7x$

8)  $-3y^2 + 4 - [3(2y - 1) + y^2]$

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

### Perform the following operations.

10) Subtract the sum of 4 and  $-9$  from 7

11) Subtract the difference of 10 and 6 from 8

12) Evaluate  $x^2y + 2y^2$  if  $x = 2$  and  $y = -2$

13) Evaluate  $2x^2 - 3xy + y^2$  if  $x = 1$  and  $y = -2$

### Solve for x.

14)  $4x - 2(x + 2) = 4x + 2$

18)  $3 + 8y = 8y - 2$

15)  $-3x + 6 = 5(x - 2)$

19)  $3x - 4 - 5x + 7 = 0$

16)  $0.01(x - 10) + 0.3 = 0.8$

20)  $-2(2x - 5) = -3x + 7 - x + 3$

17)  $\frac{2}{3}x + 1 = \frac{1}{2}$

21)  $\frac{x-4}{3} + x = \frac{1}{2}$

**Solve for x and graph. Write your solution set in interval notation.**

22)  $3x - 2 > x + 10$

24)  $-3x + 4 < -x + 2$

23)  $\frac{2}{3}x + 1 \leq 3$

25)  $-\frac{3}{4}x - 2 \geq 4$

**Solve each formula for the specified variable.**

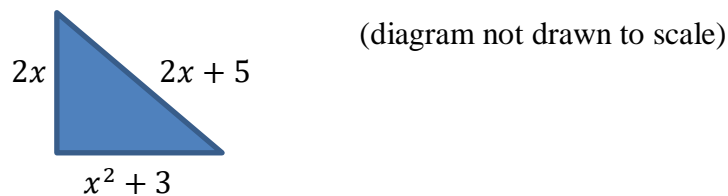
26)  $V = \frac{1}{3}Ah$  for  $A$

27)  $A = P + PRT$  for  $R$

**Answer the following problems.**

- 28) Is  $x = 3$  a solution of  $7x - 3 = 18$ ?
- 29) Is  $x = 1$  a solution of  $3x^2 + 4 = x - 1$ ?
- 30) The temperature at the Winter Olympics was a frigid 14 degrees below zero in the morning, but by noon it had risen 31 degrees. What was the temperature at noon?
- 31) The number 72 is what percent of 180?
- 32) The number of employees of a company decreased from 225 to 189. Find this percent of decrease.
- 33) Ann is 8 years younger than Sue. How old is Ann if the sum of their ages is 20?
- 34) The sum of two numbers is 40. Find the numbers if one is 7 more than twice the other.
- 35) The length of a rectangle is 5 less than twice the width. Find the dimensions if the perimeter is 110 feet.
- 36) Jim has 100 coins made up of nickels and quarters. How many does he have of each if the total value is \$10.00?
- 37) The Jones family is planning to drive to Disneyland from their small town outside New Orleans, a distance of 700 miles. If they plan to average a rate of 55 mph, how long will the trip take?
- 38) Albert and Ben live 15 miles away from each other and want to meet up by walking toward one another. It takes 2 hours for them to meet and Ben walks one mile per hour faster than Albert. Find both walking speeds.

- 39) According to federal regulations, a wheelchair ramp should rise no more than 1 foot for a horizontal distance of 12 feet. Write the slope as a grade. Round to the nearest tenth of a percent.
- 40) Find the slope of the line that is (a) parallel and (b) perpendicular to the line through the pair of points, (6, -2) and (1, 4).
- 41) Sue has been pricing Amtrak train fares for a group trip to Chicago. Three adults and four children must pay \$159. Two adults and three children must pay \$112. Find the price of an adult's ticket and find the price of a child's ticket.
- 42) Macadamia nuts cost an astounding \$16.50 per pound, but research shows that mixed nuts sell better if macadamias are included. The standard mix costs \$9.25 per pound. Find how many pounds of macadamias and how many pounds of the standard mix should be combined to produce 40 pounds that will cost \$10 per pound. Find the amounts to the nearest tenth of a pound.
- 43) The perimeter of a triangle is 85 feet. Find the lengths of its sides.



- 44) Complete the table for the polynomial,  $9y^2 - 30y + 25$ .

Term	Numerical coefficient	Degree of Term
$9y^2$		
$-30y$		
25		

**Determine whether each ordered pair is a solution of the given equation.**

- 45)  $-2x + 5y = 10$ ; (1, 1)
- 46)  $7x - 8y = 56$ ; (8, 0)

**Graph.**

- 47) The points: A (1,4) B (-2,3) C (3,-5) D (-4,-1) E(0,3) F(4,0)
- 48)  $y = \frac{1}{3}x + 3$  What is the slope, y-intercept, and x-intercept?
- 49)  $y = 4x - 1$  What is the slope, y-intercept, and x-intercept?

50)  $3x + 4y = 12$       What is the slope, y-intercept, and x-intercept?

51)  $x = 5$       What is the slope?

52)  $y = -1$       What is the slope?

**Find the slope between the set of points.**

53) (3,6) and (8,12)

55) (10,2) and (5,7)

54) (-2,1) and (0,-3)

56) (-1,-1) and (-5,0)

**Determine the equation of the line in standard form and slope intercept form if possible.**

57) Through the point (0, -2) and with a slope of 4

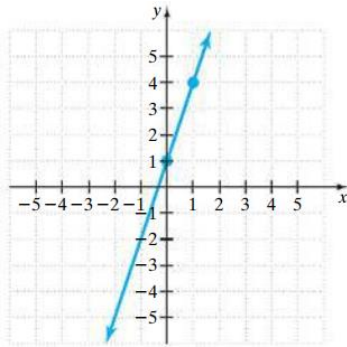
58) Through the point (2, 5) and with a slope of -1

59) Through the points (3, 4) and (4, 6)

60) Through the points (4, 5) and (6, -1)

61) Through (-5, -1) and parallel to  $x = 7$

62)



**Determine whether the lines are parallel, perpendicular, or neither.**

63)  $2x + 3y = 12$  and  $2y = 3x - 4$

64)  $y = 4x + 9$  and  $2y - 8x = 10$

**Determine whether each ordered pair is a solution of the system of linear equations.**

65)  $3x - y = 5$   
 $x + 2y = 11$

a. (3, 4)

b. (0, -5)

**Solve the following system of equations.**

$$\begin{aligned} 66) \quad x + 5y &= 2 \\ 2x + 3y &= -3 \end{aligned}$$

$$\begin{aligned} 67) \quad 4x + 2y &= 5 \\ -2x &= y + 4 \end{aligned}$$

$$\begin{aligned} 68) \quad 2x + 3y &= 21 \\ 3x + 2y &= 19 \end{aligned}$$

$$\begin{aligned} 69) \quad 2x + y &= 4 \\ 3x - 2y &= -1 \end{aligned}$$

$$\begin{aligned} 70) \quad 2x - 3y &= 5 \\ y + 2x &= 9 \end{aligned}$$

$$\begin{aligned} 71) \quad \frac{1}{4}x - 2y &= 1 \\ x - 8y &= 4 \end{aligned}$$

$$\begin{aligned} 72) \quad x &= \frac{3}{4}y + 2 \\ y &= x + 1 \end{aligned}$$

$$\begin{aligned} 73) \quad y + 5x &= 4 \\ x &= 2y + 3 \end{aligned}$$

**Write in scientific notation.**

$$74) \quad 26,000$$

$$75) \quad 0.00519$$

**Write in standard form.**

$$76) \quad 3.7 \times 10^3$$

$$77) \quad 2.47 \times 10^{-2}$$

**Add or subtract as indicated.**

$$78) \quad (-2x^2 + 5x - 1) + (-2x^2 + x + 3)$$

$$79) \quad (2x^3 + 8x^2 - 6x) - (2x^3 - x^2 + 1)$$

$$80) \quad \text{Subtract } (5y^2 + 2y - 6) \text{ from } (-3y^2 - 2y + 11)$$

$$81) \quad \text{Subtract } (5z - 7) \text{ from the sum of } (8z + 11) \text{ and } (9z - 2)$$

**Multiply.**

$$82) \quad (-5x^3)(-2x^4)$$

$$83) \quad 5x(2x^3 + 6)$$

$$84) \quad (2x - 4)(3x + 2)$$

$$85) \quad (-3x + 5)(-4x - 3)$$

$$86) \quad (2x + 3)^2$$

$$87) \quad (2 - 4x)^2$$

**Simplify.**

88)  $(2a^2)^4$

89)  $(-3a^3b^{-4})^2$

90)  $\frac{6x^2}{2x^{-3}}$

91)  $\frac{(xy^2)^3}{(x^2y^3)^3}$

92)  $\frac{a^{-4}}{a^5}$

**Write with positive exponents.**

93)  $a^{-2}b^{-3}$

94)  $\frac{-2a}{x^{-2}y^{-4}}$

95)  $\frac{3a^2b^{-4}}{4x^{-1}y}$

96)  $3x^2y^{-5}$

97)  $-4x^{-1}y^{-2}$

98)  $\frac{15a^{-2}b^3}{3x^2y^{-4}}$

**Divide.**

99)  $\frac{10x^5+55x^3+25x^2}{5x^2}$

100)  $(x^2 + 3x - 10) \div (x - 2)$

101)  $(4x^2 + 8x - 7) \div (2x + 1)$

**Factor completely.**

102)  $x^2 + 2x - 24$

103)  $3x^2 - 12$

104)  $2x^2 - 2x - 12$

105)  $3x^3 + 9x^2 + 6x$

106)  $x^3 - 6x^2 + 4x - 24$

107)  $x^4 - 81$

**Solve for x.**

108)  $x^2 + 13x + 40 = 0$

110)  $x^2 + 4x = 0$

109)  $2x^2 = 72$

# Answers

1)  $-10$

2)  $4$

3)  $-5$

4) a.  $>$  b.  $<$  c.  $=$

5)  $-2a - 3b + 3$

6)  $-4x^3 - 6x^2$

7)  $-2x + 6$

8)  $-4y^2 - 6y + 7$

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

10)  $12$

11)  $4$

12)  $0$

13)  $12$

14)  $x = -3$

15)  $x = 2$

16)  $x = 60$

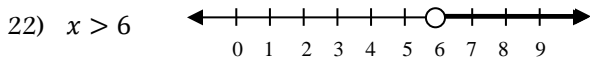
17)  $x = -\frac{3}{4}$

18) No solution

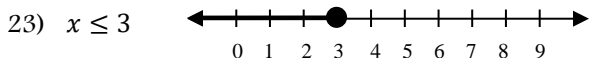
19)  $x = \frac{3}{2}$

20) All real numbers

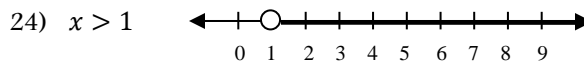
21)  $x = \frac{11}{8}$



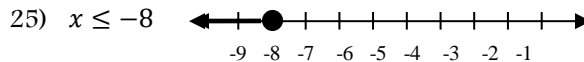
Interval notation:  $(6, \infty)$



Interval notation:  $(-\infty, 3]$



Interval notation:  $(1, \infty)$



Interval notation:  $(-\infty, -8]$

26)  $A = \frac{3V}{h}$

27)  $R = \frac{A-P}{PT}$

28) Yes

29) No

30) 17 degrees

31) 40%

32) 16%

33) Ann is 6

34) 11, 29

35) Width = 20 ft and length = 35 ft

36) 75 nickels, 25 quarters

37)  $12\frac{8}{11}$  hours

38) Albert = 3.25 mph; Ben = 4.25 mph

39) 8.3%

40) a.  $-\frac{6}{5}$  b.  $\frac{5}{6}$

41) Adult ticket: \$29; child ticket: \$18

42) Macadamias: 4.1 pounds &  
standard mix: 35.9 pounds

43) 14 ft, 19 ft, 52 ft

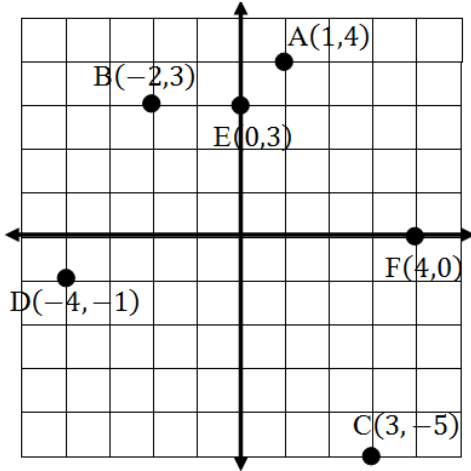
44)

Term	Numerical coefficient	Degree of Term
$9y^2$	9	2
$-30y$	-30	1
25	25	0

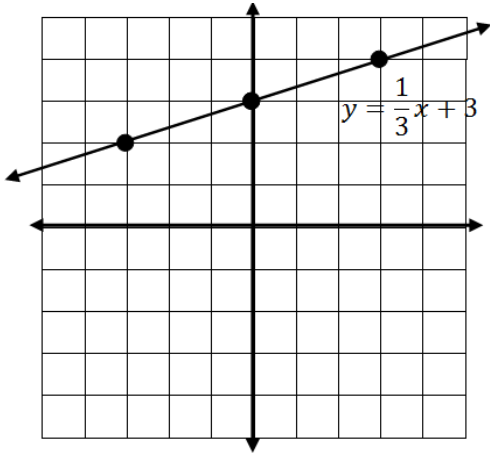
45) No

46) Yes

47)



48)

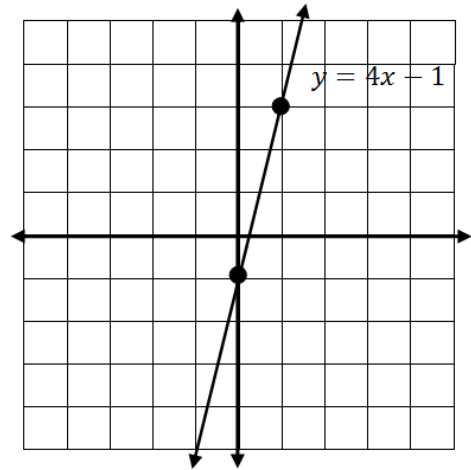


$$m = \frac{1}{3}$$

$$y - \text{intercept} = (0, 3)$$

$$x - \text{intercept} = (-9, 0)$$

49)

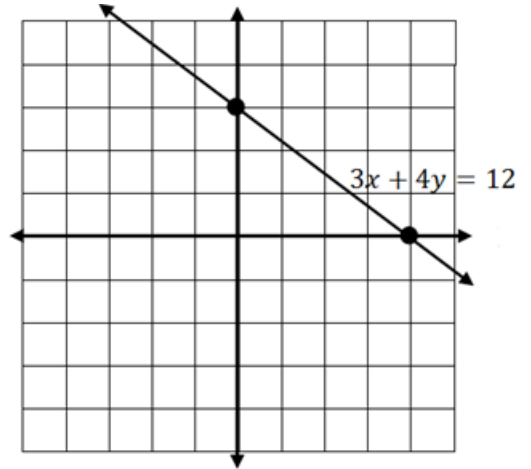


$$m = 4$$

$$y - \text{intercept} = (0, -1)$$

$$x - \text{intercept} = \left(\frac{1}{4}, 0\right)$$

50)



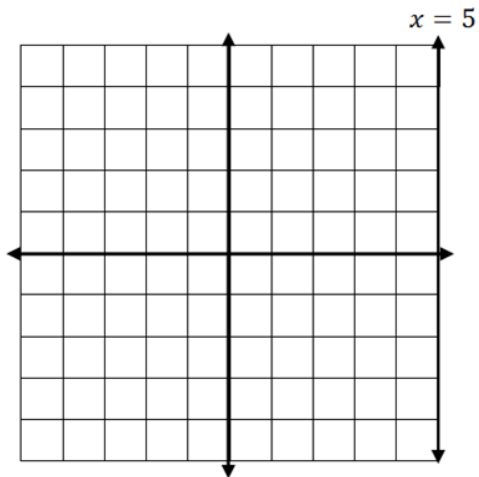
$$m = -\frac{3}{4}$$

$$y - \text{intercept} = (0, 3)$$

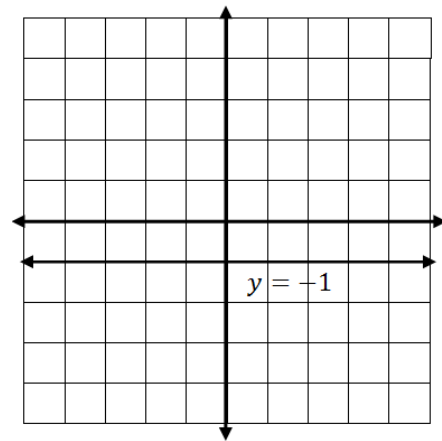
$$x - \text{intercept} = (4, 0)$$



51)

 $m = \text{undefined}$ 

52)

 $m = 0$ 

53)  $\frac{6}{5}$

54)  $-2$

55)  $-1$

56)  $-\frac{1}{4}$

57)  $y = 4x - 2$  (slope-intercept form)

$4x - y = 2$  (standard form)

58)  $y = -x + 7$  (slope-intercept form)

$x + y = 7$  (standard form)

59)  $y = 2x - 2$  (slope-intercept form)

$2x - y = 2$  (standard form)

60)  $y = -3x + 17$  (slope-intercept form)

$3x + y = 17$  (standard form)

61)  $x = -5$  (standard form)

62)  $y = 3x + 1$  (slope-intercept form)

$3x - y = -1$  (standard form)

63) Perpendicular

64) Parallel

65) a. yes b. no

66)  $(-3, 1)$ 

67) No solution

68)  $(3, 5)$ 69)  $(1, 2)$ 70)  $(4, 1)$ 

71) Infinite number of solutions

72)  $(11, 12)$ 73)  $(1, -1)$ 74)  $2.6 \times 10^4$ 75)  $5.19 \times 10^{-3}$ 

76) 3700

77) 0.0247

78)  $-4x^2 + 6x + 2$

79)  $9x^2 - 6x - 1$

80)  $-8y^2 - 4y + 17$

81)  $12z + 16$

82)  $10x^7$

83)  $10x^4 + 30x$

84)  $6x^2 - 8x - 8$

85)  $12x^2 - 11x - 15$

86)  $4x^2 + 12x + 9$

87)  $4 - 16x + 16x^2$

88)  $16a^8$

89)  $\frac{9a^6}{b^8}$

90)  $3x^5$

91)  $\frac{1}{x^3y^3}$

92)  $\frac{1}{a^9}$

93)  $\frac{1}{a^2b^3}$

94)  $-2ax^2y^4$

95)  $\frac{3a^2x}{4b^4y}$

96)  $\frac{3x^2}{y^5}$

97)  $\frac{-4}{xy^2}$

98)  $\frac{5b^3y^4}{a^2x^2}$

99)  $2x^3 + 11x + 5$

100)  $x + 5$

101)  $2x + 3 + \frac{-10}{2x+1}$  or  $2x + 3 - \frac{10}{2x+1}$

102)  $(x + 6)(x - 4)$

103)  $3(x - 2)(x + 2)$

104)  $2(x - 3)(x + 2)$

105)  $3x(x + 2)(x + 1)$

106)  $(x^2 + 4)(x - 6)$

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

108)  $-8, -5$

109)  $-6, 6$

110)  $0, -4$