SUNY CORNING COMMUNITY COLLEGE

# Math Placement - Level 3 Review

**1.** Multiply:

$\frac{1}{4} \cdot \frac{2}{4}$

Give your answer as a fraction, reduced to lowest terms

**2.** Multiply. Write your answer in lowest terms.

$\frac{7}{20} \cdot \frac{1}{4} \cdot \frac{8}{7}$

**3.** Divide. Write your answer in lowest terms.

$\frac{12}{5} \div \frac{3}{10}$

**4.** Divide. Write your answer in lowest terms.

$\frac{7}{20} \div \left(-\frac{21}{10}\right)$

**5.** Add $\frac{1}{8} + \frac{3}{10}$

Give your answer as a fraction, reduced to lowest terms.

**6.** Add: $\frac{1}{6} + \left(-\frac{3}{4}\right)$

Give your answer as a reduced fraction.

**7.** Add $\frac{1}{3} + \frac{1}{21} + \frac{4}{7}$ and write the result in simplified form.

**8.** Subtract: $\frac{7}{10} - \frac{4}{15}$

Give your answer in reduced terms.

**9.** Scott bought a large bag of cookies at the bakery. He ate $\frac{1}{6}$ of a bag and his sister ate $\frac{1}{4}$ of a bag.

What fraction of the bag did they eat?

What fraction of the bag remains?

**10.** Use the rule for order of operations to simplify the expression as much as possible:

$67 - 3(5 \cdot 8 - 19) =$

**11.** Simplify:

$(9 - 4)^3 \cdot [9^2 \div (2 + 7)]$

**12.** You read online that a 15 ft by 20 ft brick patio would cost about $2,275 to have professionally installed. Estimate the cost of having a 24 by 29 ft brick patio installed.

$_____

Round your answer to the nearest dollar.

**13.** When Ibuprofen is given for fever to children 6 months of age up to 2 years, the usual dose is 5 milligrams (mg) per kilogram (kg) of body weight when the fever is under 102.5 degrees Fahrenheit. How much medicine would be usual dose for a 18 month old weighing 22 pounds?

_____milligrams

Round your answer to the nearest milligram.

**14.** Solve $-7(x+2)+8=-4(x-2)$ for $x$

**15.** Solve for $x$ : $\frac{1}{3}x+\frac{1}{5}=-5\left(\frac{3}{4}x+3\right)$

**16.** Solve the equation $6x+1=2x+9$ algebraically.

**17.** Solve the equation $9x+5=3x+6$ .

**18.** Solve the equation. Give your answer as an integer or a reduced fraction.

$7-6(-9c+7)=-2c-5$

**19.** Solve the equation, $19x+9-18x=20$ , for the given variable.

**20.** Simplify: $2(x+3)-\frac{1}{3}(-12x-12)$

**21.** Simplify $-4+4(6-2x)$

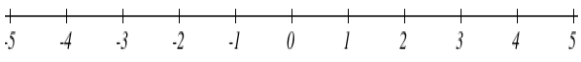
**22.** Perform the indicated operations and simplify: $\frac{1}{11}x+\frac{1}{7}(x+2)$

**23.** Simplify $\frac{2}{7}x+\frac{4}{7}-2x+\frac{16}{7}+\frac{11}{7}x-4$ , leaving all values as fractions or integers (no decimals)

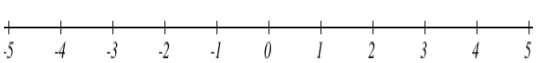
**24.** Ariana walks 4.3 miles in 40 minutes. If she walks at the same speed the whole time, how far will she walk in 110 minutes? *Round your answer to 2 decimal places as needed*

Ariana will walk _____miles in 110 minutes.

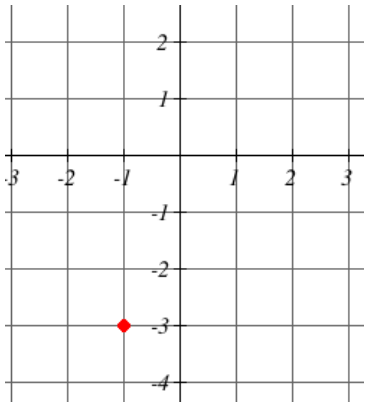
**25.** Solve the inequality. Graph the solution on the number line.$-9x-9\geq 18$



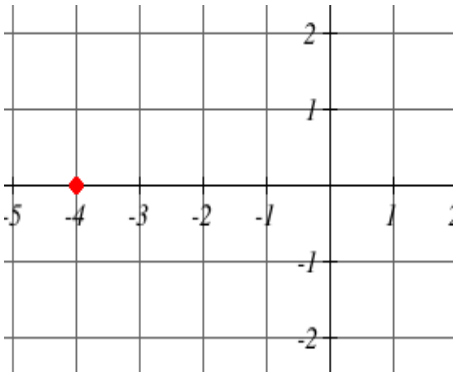

**26.** Solve the inequality. Graph the solution on the number line. $-\frac{7}{4}x\leq -\frac{7}{4}$



**27.** Find the coordinates of the point plotted below




**28.** Find the coordinates of the point plotted below

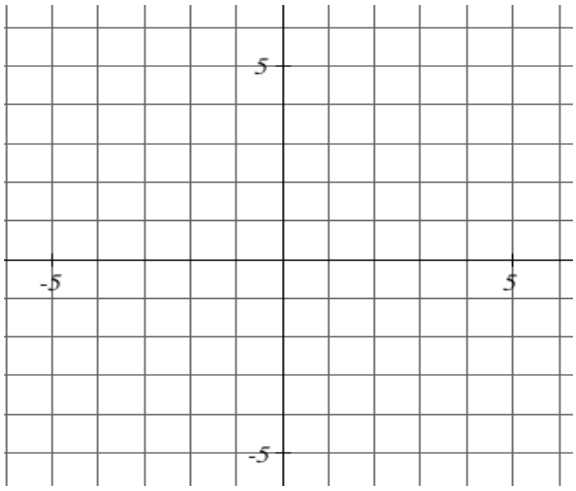



**29. (1 pts)**

Graphing Linear Functions

*Identify the Slope and Intercepts of the function* $f(x) = -\frac{1}{2}x - 3$ *. Then draw an accurate graph of the function.*

$$f(x) = -\frac{1}{2}x - 3$$



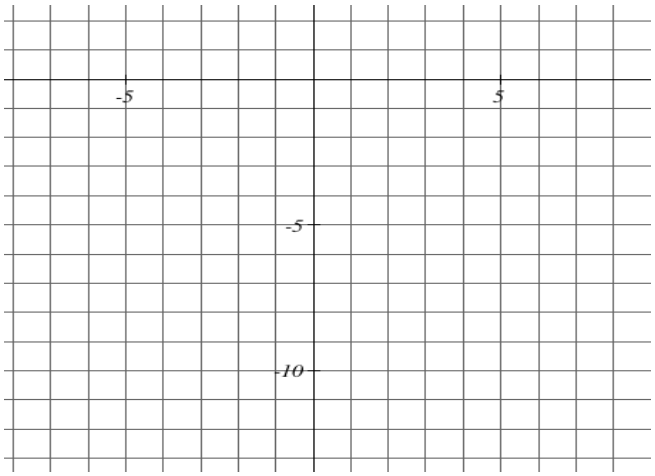

Slope

Vertical Intercept

Horizontal Intercept

**30.** Graphing Linear Equations

*Determine the vertical and horizontal intercept of the linear equation* $18x + 3y = -36$ *. Then draw an accurate graph of the linear equation.*




Vertical Intercept

Horizontal Intercept

$18x + 3y = -36$

**31.** Linear Equations in General Form

Consider the following equation: $6x - y = 5$
*Enter your answers as integers or reduced fractions.*

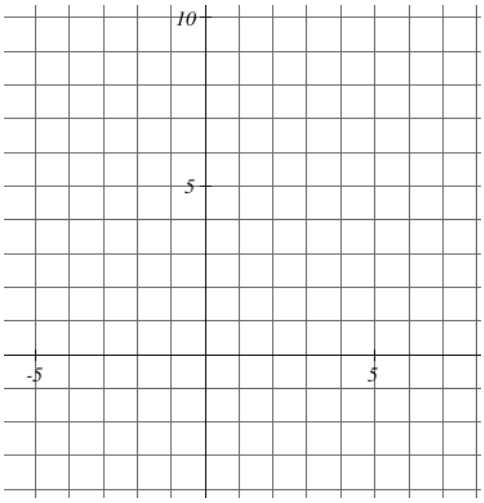
Vertical Intercept: ( , )

Horizontal Intercept: ( , )

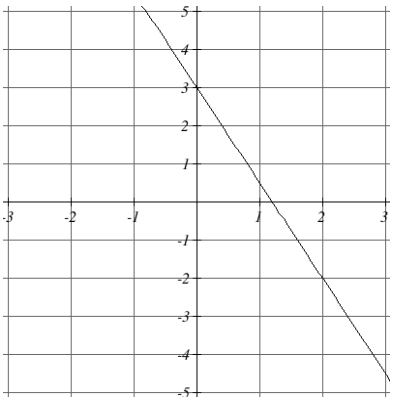
Slope =

Write the equation $6x - y = 5$ in slope-intercept the form: $y = mx + b$.

**32.** *Use the intercepts to draw the graph of the function* $12x + 3y = 24$ *.*

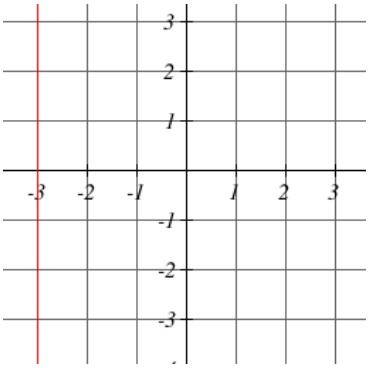



**33.** Find the slope of the line shown below

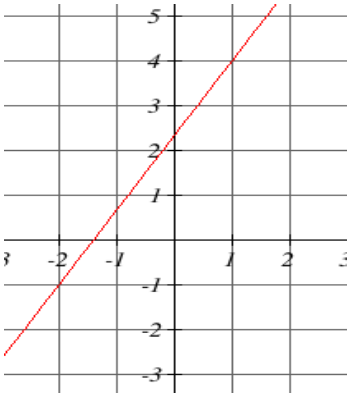



slope =

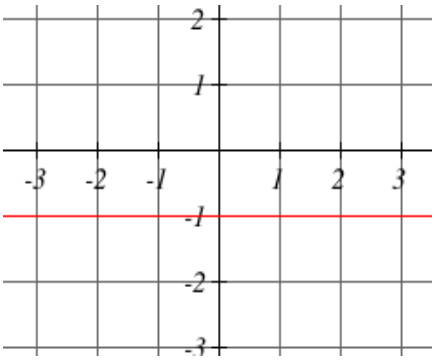
**34.** Find the slope of each line in the 5 graphs below. Make sure to scroll down to see all the graphs. Give your answers as integers or reduced fractions. If a line does not have a slope, enter DNE.



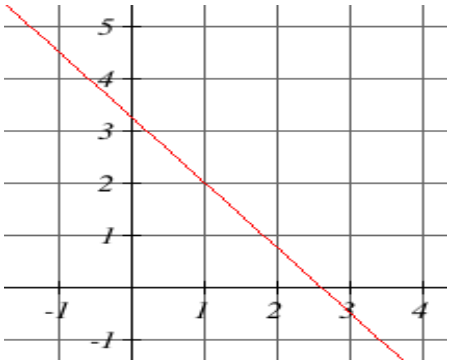
slope =



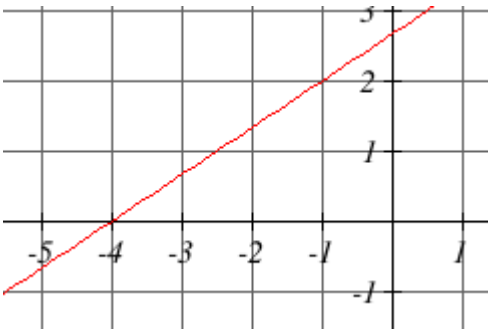
slope =



slope =



slope =



slope =

**35.** Given the points (7, -1) and (9, 3) find the slope.

**36.** Find the slope of the line that goes through the points (-3,9) and (1,-11).

**37.** Find the slope between the points (10,2) and (11,2) . Enter DNE if the slope between the points is undefined.

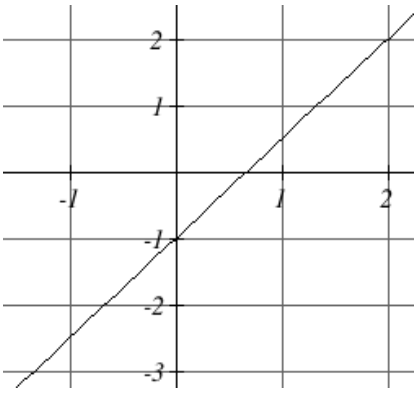
Slope:

**38.** Find the equation of the line with slope = -6 and passing through (9,-6). Write your equation in point-slope AND slope-intercept forms.

point-slope form:

slope-intercept form:

**39.** Write an equation for the graph below in terms of $x$




$y =$

**40.** Give the equation of the line with a slope of $\frac{1}{6}$ and a y-intercept of (0,7) .

**41.** Find the equation (in terms of $x$ ) of the line through the points (-5,4) and (2,-5)

**42.** Given the function $f(x) = 4x^2 - 4x + 2$ . Calculate the following values:
$f(-2) =$
$f(-1) =$
$f(0) =$
$f(1) =$
$f(2) =$

**43.** Add the polynomials:

$(4x^4 + 9x^3 - 2) + (-12x^3 + 2x^2 + 8x)$

**44.** Subtract the polynomials and simplify the result completely:

$(7x^5 - 2x^3 - 11x^2 + 11)$
$- (4x^5 - 5x^4 + 7x^2 + 2)$

**45.** Expand out: $(4x + 2)^2$

**46.** Factor the GCF out of the polynomial below:

$6x^6 + 10x^4 + 14x^3$

**47.** Factor $4z^6 + 20z^4$

**48.** Factor completely. If not factorable, write Prime.

$8x^2 + 22xy + 5y^2$

**49.** Factor completely. If not factorable, write Prime.

$15x^2 - 51x + 18$

**50.** Factor $x^2 - 4x - 12$ .

**51.** Factor the trinomial $x^2 - 7x + 10$

**52.** Solve $x^2 + 10x + 21 = 0$

**53.** Solve the equation $-5r^2 + 6 = -7r$

**54.** Solve the given equation.

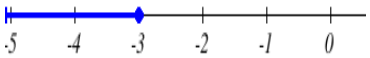
$15 = (r - 7)(r - 5)$

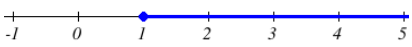
**55.** Solve the equation $-10t^3 = -6t^2 - 4t$ :

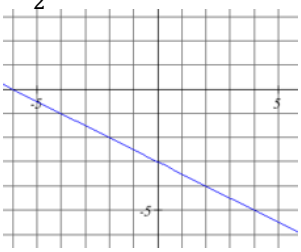
**56.** Solve the equation $p^2 - 2p - 48 = 0$ by factoring.

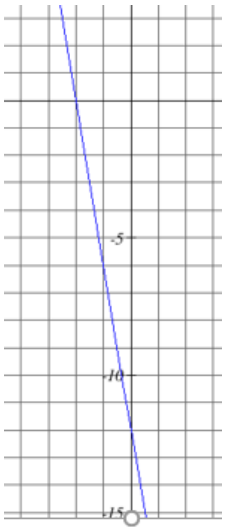
**57.** Solve the equation $m^2 - 49 = 0$ by factoring

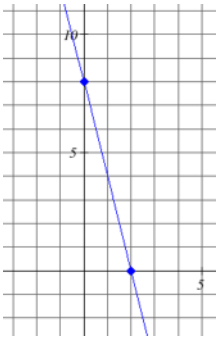
**Key - Form 1**

1. $\frac{1}{8}$
2. $\frac{1}{10}$
3. 8
4. $-\frac{1}{6}$
5. $\frac{17}{40}$
6. $-\frac{7}{12}$
7. $\frac{20}{21}$
8. $\frac{13}{30}$
9. $\frac{5}{12} \sim \frac{7}{12}$
10. 4
11. 1125
12. 5278
13. 50
14. -4.6666666666667
15. $-\frac{912}{245}$
16. 2
17. 0.16666666666667
18. $\frac{15}{28}$
19. 11
20. $6x + 10$
21. $-8x + 20$
22. $\frac{18}{77}x + \frac{2}{7}$
23. $-\frac{1}{7}x - \frac{8}{7}$
24. 11.83
25. $x \leq -3 \sim$ 

26. $x \geq 1 \sim$ 

27. $(-1, -3)$
28. $(-4,0)$
29. $-\frac{1}{2} \sim (0, -3) \sim (-6,0) \sim$ 

30. $(0, -12) \sim (-2,0) \sim$ 

31. $0 \sim -5 \sim \frac{5}{6} \sim 0 \sim 6 \sim 6 \sim -5$
32. $8 \sim (0,8) \sim 2 \sim (2,0) \sim$ 

33. $-\frac{5}{2}$
34. $DNE \sim \frac{5}{3} \sim 0 \sim -\frac{5}{4} \sim \frac{2}{3}$
35. 2
36. $\frac{-11-(9)}{1-(-3)} = -\frac{20}{4}$ which reduces to $-5$ (if it's not already reduced)
37. 0
38. y+6=-6(x-9) ~ y=-6 x+48
39. $\frac{3}{2}x - 1$

40. $y = \frac{1}{6}x + 7$
41. $-\frac{9}{7}x - \frac{17}{7}$
42. $26 \sim 10 \sim 2 \sim 2 \sim 10$
43. $4x^4 - 3x^3 + 2x^2 + 8x - 2$
44. $3x^5 + 5x^4 - 2x^3 - 18x^2 + 9$
45. $16x^2 + 16 \cdot x + 4$
46. $2x^3(3x^3 + 5x + 7)$
47. $4z^4(1z^2 + 5)$
48. $(4x + y)(2x + 5y)$
49. $3(5x - 2)(x - 3)$
50. $(x + 2)(x - 6)$
51. $(x - 2)(x - 5)$
52. -3 ~ -7
53. $2\ , -\frac{3}{5}$
54. 10,2
55. $1\ , -\frac{2}{5}, 0$
56. 8,-6
57. -7,7