

## Review for End of Level Accelerated Test

Name \_\_\_\_\_ Period \_\_\_\_\_

Approximate the value of each radical.

1.  $\sqrt{22}$  4.7

2.  $\sqrt{90}$  9.5

3.  $\sqrt{5}$  2.2

4.  $\sqrt{54}$  7.3

5. Place the following values on the number line provided.

$\sqrt{12}, 4.5, 3.9, \pi$



Triangle ABC has vertices A(-2, -3), B(3, -7), C(-5, -6). Refer back to triangle ABC for each question.

6. What is A' when the figure is rotated 90° clockwise about the origin?

$$A' = (-3, 2)$$

7. What is B' when the figure is translated according to the rule  $(x, y) \rightarrow (x + 5, y - 4)$ ?

$$B' = (8, -11)$$

8. What is C' when the figure is reflected over the x-axis?

$$C' = (-5, 6)$$

9. What is A' when the figure is reflected over the y-axis?

$$A' = (2, -3)$$

10. What is B' when the figure is rotated 270° clockwise about the origin?

$$B' = (-7, 3)$$

11) Simplify:  $(4x^3y^5z)^2$

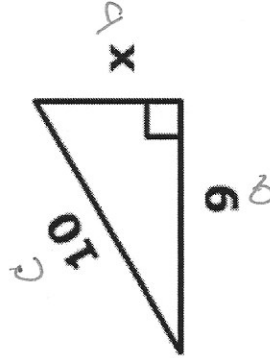
$$14x^6y^{10}z^2$$

12) Simplify:  $\frac{(3xy^3)^{-3}}{9x^5y^{-7}}$

$$= \frac{1}{243x^8y^4}$$

$$= \frac{y^7}{9x^5 \cdot 27x^3y^9} = \frac{y^7}{243x^8y^9}$$

13) What is the value of  $x$ ?



$$a^2 + b^2 = c^2$$

$$9^2 + x^2 = 10^2$$

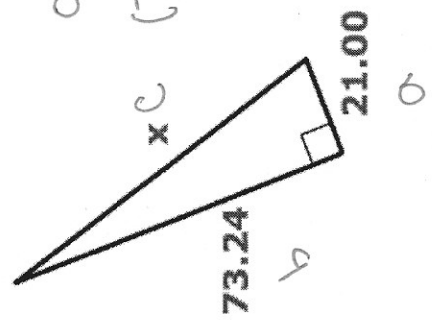
$$81 + x^2 = 100$$

$$\frac{-81}{-81} \quad \frac{-100}{-81}$$

$$x^2 = 19$$

$$x = \sqrt{19}$$

14) What is the value of  $x$ ?



$$a^2 + b^2 = c^2$$

$$(73.24)^2 + (21)^2 = x^2$$

$$5364.1 + 441 = x^2$$

$$5805.1 = x^2$$

$$x = \sqrt{5805}$$

Solve and graph each inequality

16.  $x + 3 > 8$   $x > 5$



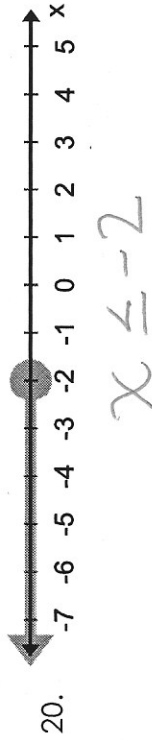
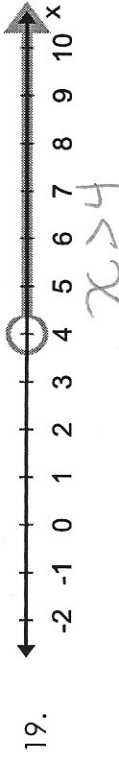
17.  $-3x \leq 6$   $x \geq -2$



18.  $4x - 3 \geq 9$   $x \geq 3$



Write the inequality that represents the graph



Convert the following into a simplified fraction.

21)  $0.\bar{4}$  Let  $x = 0.\bar{4}$   
 $10x = 4.\bar{4}$  SO  $10x = 4.\bar{4}$   
 $x = 0.\bar{4}$   $\rightarrow$   $\frac{9x}{9} = \frac{4}{9}$   
 $9x = 4$   $\rightarrow$   $x = \frac{4}{9}$

22)  $2.\bar{24}$  Let  $x = 0.\bar{24}$   
 $100x = 24.\bar{24}$   
 $x = 0.\bar{24}$   $\rightarrow$   $\frac{99x}{99} = \frac{24}{99}$   
 $99x = 24$   $\rightarrow$   $x = \frac{24}{99}$   
 SO  $2.\bar{24} = 2\frac{24}{99} = 2\frac{8}{33}$

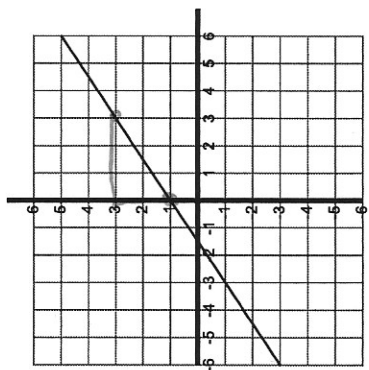
23)  $3.\bar{72}$  Let  $x = 0.\bar{72}$   
 $100x = 72.\bar{72}$   
 $x = 0.\bar{72}$   $\rightarrow$   $\frac{99x}{99} = \frac{72}{99}$   
 $99x = 72$   $\rightarrow$   $x = \frac{72}{99}$   
 SO  $3.\bar{72} = 3\frac{72}{99} = 3\frac{8}{11}$

24)  $0.2\bar{4}$  Let  $x = 0.2\bar{4}$   
 $100x = 24.\bar{4}$   
 $10x = 2.\bar{4}$   $\rightarrow$   $\frac{90x}{90} = \frac{22}{90}$   
 $90x = 22$   $\rightarrow$   $x = \frac{22}{90}$

25)  $3.4\bar{5}$   
 Let  $x = 0.4\bar{5}$   
 $100x = 45.\bar{5}$   
 $10x = 4.\bar{5}$   $\rightarrow$   $\frac{90x}{90} = \frac{41}{90}$   
 $90x = 41$   
 $x = \frac{41}{90}$   
 SO  $3.4\bar{5} = 3\frac{41}{90}$

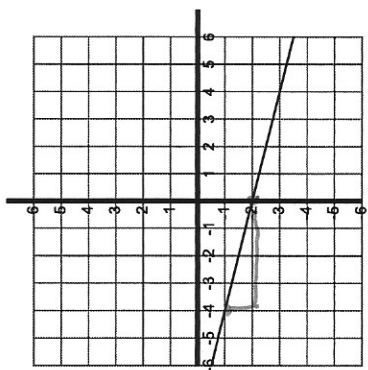
Find the slope from the following graphs.

26)



Slope  $\frac{2}{1}$

27)



Slope  $-\frac{1}{1}$

Find the slope of the line that goes through the two points.

28) (6, 4) and (3, -2)

$$\frac{\Delta y}{\Delta x} = \frac{4+2}{6-3} = \frac{6}{3} = 2$$

29) (2, 7) and (2, 6)

$$\frac{\Delta y}{\Delta x} = \frac{7-6}{2-2} = \frac{1}{0}$$

undefined slope

30) (-3, -5) and (2, -4)

$$\frac{\Delta y}{\Delta x} = \frac{-5+4}{-3-2} = \frac{-1}{-5} = \frac{1}{5}$$

Find the slope of each table.

31)

| x  | y  |
|----|----|
| 2  | 5  |
| 5  | 3  |
| 8  | 1  |
| 11 | -1 |

$$\frac{\Delta y}{\Delta x} = \frac{5-3}{2-5} = \frac{2}{-3}$$

$\frac{2}{-3}$

32)

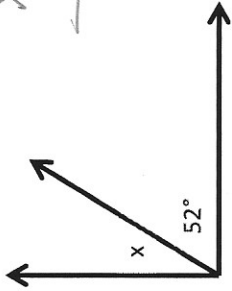
| x  | y |
|----|---|
| -3 | 2 |
| -4 | 4 |
| -5 | 6 |
| -6 | 8 |

$$\frac{\Delta y}{\Delta x} = \frac{4-2}{-4+3} = \frac{2}{-1}$$

$\frac{2}{-1}$

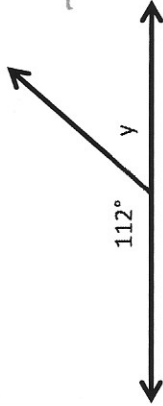
Find the missing angles

33)



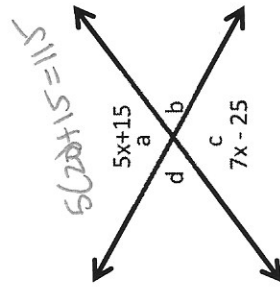
$$\begin{array}{r} x + 52 = 90 \\ -52 \quad -52 \\ \hline x = 38 \end{array}$$

34)



$$\begin{array}{r} 112 + y = 180 \\ -112 \quad -112 \\ \hline y = 68 \end{array}$$

35)



$$\begin{array}{r} 5x + 15 = 7x - 25 \\ -5x \quad -5x \\ \hline 15 = 2x - 25 \\ +25 \quad +25 \\ \hline 40 = 2x \\ \frac{40}{2} = \frac{2x}{2} \\ x = 20 \end{array}$$

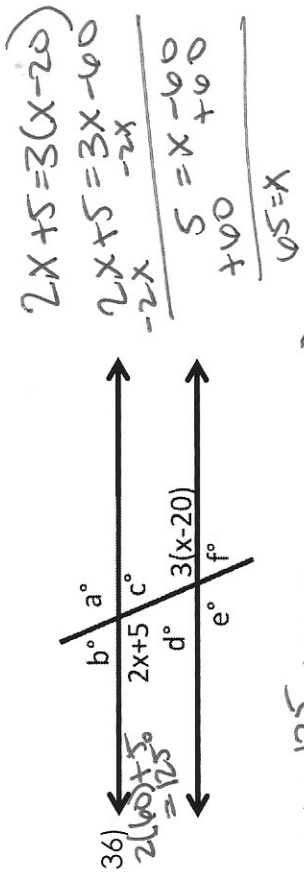
Angle a =  $115^\circ$

Angle b =  $65^\circ$

Angle c =  $115^\circ$

Angle d =  $65^\circ$

$$\frac{180}{-115} = \frac{65}{65}$$



Angle a = 125 because vertical to  $(2x+5)$

Angle b = 55 because  $180 - 125 = 55$

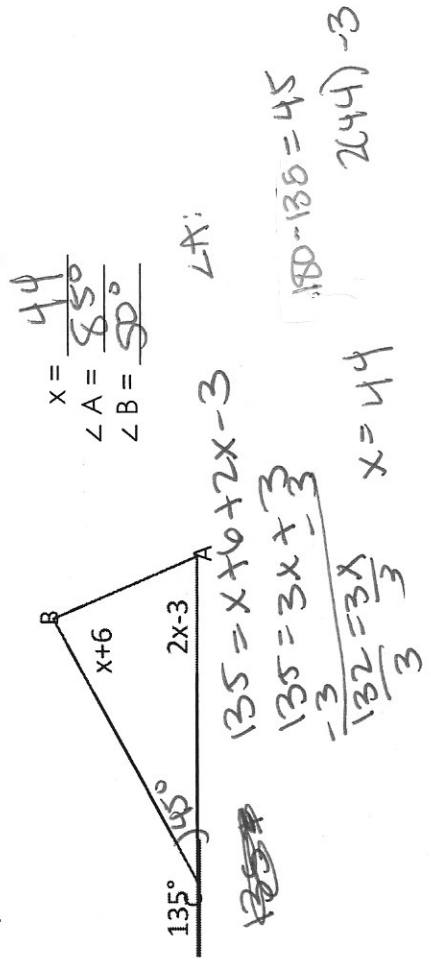
Angle c = 55 because vertical to  $\angle b$

Angle d = 55 because corresponding to  $\angle b$

Angle e = 125 because alt. angles to  $\angle c$

Angle f = 55 because alt. angles to  $\angle b$

37) Solve for x and find the measure of the missing angles.



Solve each of the following.

38)  $\frac{3}{5}p + 3 = 4$

$$\frac{3}{5}p = 1 - \frac{5}{5}$$

$$p = \frac{5}{3}$$

40)  $8y - 3 = 6y + 17$

$$2y = 20$$

$$y = 10$$

42)  $8x - 20 = 4$

$$8x = 24$$

$$x = 3$$

44)  $6(x - 3) + 10 = 2(3x - 4)$

$$6x - 18 + 10 = 6x - 8$$

$$6x - 8 = 6x - 8$$

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46)  $3|2x + 7| - 11 = 10$

$$3|2x + 7| = 21$$

$$|2x + 7| = 7$$

$$2x + 7 = 7 \quad \text{or} \quad 2x + 7 = -7$$

$$2x = 0 \quad \text{or} \quad 2x = -14$$

$$x = 0 \quad \text{or} \quad x = -7$$

39)  $8(3a + 6) = 9(2a - 4)$

$$24a + 48 = 18a - 36$$

$$6a + 48 = -36$$

$$-48 \quad -48$$

$$6a = -84$$

$$a = \frac{-14}{1}$$

41)  $\frac{2}{3}(x + 2) = \frac{3}{2}x - 6$

$$2(x + 2) = 9x - 36$$

$$2x + 4 = 9x - 36$$

$$-7x = -40$$

$$x = \frac{40}{7}$$

43)  $\frac{1}{3}(x + 6) - 5 = -2$

$$x + 6 - 15 = -6$$

$$x - 9 = -6$$

$$+9 \quad +9$$

$$x = 3$$

45)  $|4x + 5| = 15$

$$4x + 5 = 15 \quad \text{or} \quad 4x + 5 = -15$$

$$-5 \quad -5$$

$$\frac{4x}{4} = \frac{10}{4}$$

$$x = \frac{10}{4} = \frac{5}{2}$$

$$4x + 5 = -15$$

$$-5 \quad -5$$

$$\frac{4x}{4} = \frac{-20}{4}$$

$$x = -5$$

Write the equation of the line in slope-intercept form for each situation.

47)  $m = \frac{2}{5}$  and  $b = -4$

Equation:

$y = \frac{2}{5}x - 4$

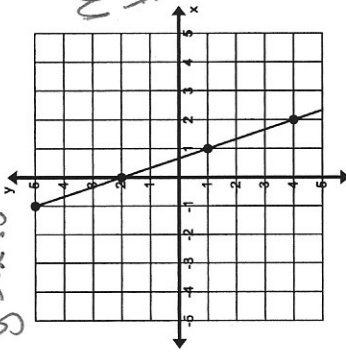
48)  $m = -1$  and passes through the point  $(2, 3)$

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

$y - 3 = -x + 2$

$y = -x + 5$

Equation:  $y = -x + 5$



49)

Equation:  $y = -3x + 2$

53) Passes through the points  $(3, 6)$  and  $(3, -9)$

Equation:

$x = 3$

$\frac{\Delta y}{\Delta x} = \frac{6 - (-9)}{3 - 3} = \frac{15}{0}$

$\frac{\Delta y}{\Delta x} = \frac{5 - 2}{-14 + 5} = \frac{3}{-9} = -\frac{1}{3}$

Equation:

$y = -\frac{1}{3}x - \frac{13}{3}$

$y + 5 = -\frac{1}{3}(x - 2)$   
 $y = -\frac{1}{3}x + \frac{2}{3} - \frac{15}{3}$

Solve the following by graphing.

55)  $\begin{cases} y = \frac{1}{2}x + 4 \\ y = -x - 2 \end{cases}$

Solution:

$(-4, 2)$

50) Passes through the points  $(-1, -3)$  and  $(3, 5)$

$y + 3 = 2(x + 1)$

$y = 2x + 2 - 3$

$y = 2x - 1$

$\frac{\Delta y}{\Delta x} = \frac{5 + 3}{3 + 1} = \frac{8}{4} = 2$

Equation:

$y = 2x - 1$

51)

|   |    |   |   |    |
|---|----|---|---|----|
| x | -3 | 0 | 3 | 6  |
| y | -4 | 2 | 8 | 14 |

$y - 2 = \frac{1}{2}(x - 0)$

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

52)  $m = -\frac{3}{4}$  and passes through the point  $(2, 5)$

$y - 5 = -\frac{3}{4}(x - 2)$

$y = -\frac{3}{4}x + \frac{3}{2} + \frac{10}{2}$

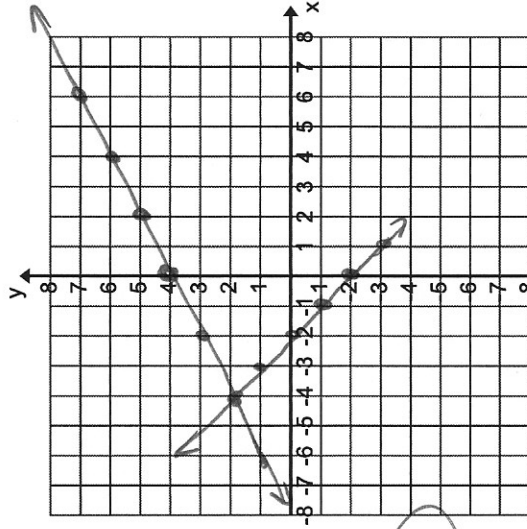
$\frac{\Delta y}{\Delta x} = \frac{0 + 3}{2 + 4} = \frac{3}{6} = \frac{1}{2}$

Equation:

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

Equation:

$y = -\frac{3}{4}x + \frac{13}{2}$



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Solve each system of linear equations by the Elimination method.

56)  $\begin{cases} 4x + y = 12 \\ x - 2y = -4 \end{cases}$

9.  $-\frac{2}{9} - 2y = -4$

$-2 - 18y = -36$   
 $+2$

$12x - 4y = -32$   
 $20x = -20$   
 $x = -1$

$(-1, 5)$

$y = 3(-1) + 8$   
 $y = -3 + 8$   
 $y = 5$

58)  $\begin{cases} x - 2y = -19 \\ 5x + 2y = 1 \end{cases}$

$\frac{6x}{6} = \frac{-18}{6}$   
 $x = -3$

$(-3, 8)$

59)  $\begin{cases} 3x + 4y = 18 \\ -2x + 4y = 8 \end{cases}$

$-2(2) + 4y = 8$   
 $-4 + 4y = 8$   
 $+4$

$\frac{4y}{4} = \frac{12}{4}$   
 $y = 3$

$(2, 3)$

Perform each operation.

60)  $(4 \times 10^5) - (3.4 \times 10^4)$   
 $0.34 \times 10^5$

$3.66 \times 10^5$

61)  $(4.2 \times 10^{-3}) + (3.4 \times 10^{-4})$   
 $0.34 \times 10^{-3}$

$4.54 \times 10^{-3}$

62)  $\frac{4.8 \times 10^4}{1.2 \times 10^{-2}}$   
 $4.8 \div 1.2 = 4$   
 $10^4 \div 10^{-2} = 10^6$

$4 \times 10^6$

63)  $(2.2 \times 10^3)(3.5 \times 10^{-6})$   
 $2.2 \times 3.5 = 7.7$   
 $10^3 \cdot 10^{-6} = 10^{-3}$

$7.7 \times 10^{-3}$

Convert to Scientific Notation:

64) 0.000061  
 $6.1 \times 10^{-5}$

Convert to Standard Notation

65)  $4.67 \times 10^4$   
 $46,700$