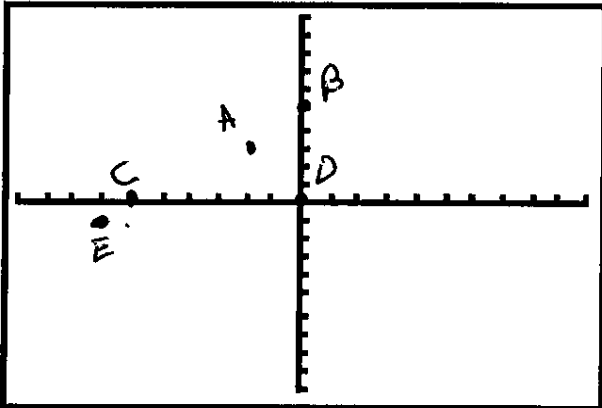


Test 2 (Chapter 3 / 4) REVIEW

Questions from Chapter 3

1. Plot the following points and label

- A (-2, 3)
- B (0, 5)
- C (-6, 0)
- D (0, 0)
- E (-7, -1)



2. Is (-2, 5) a solution to:

$$-x + y = 3$$

$$-(-2) + 5 = 3$$

$$2 + 5 = 3$$

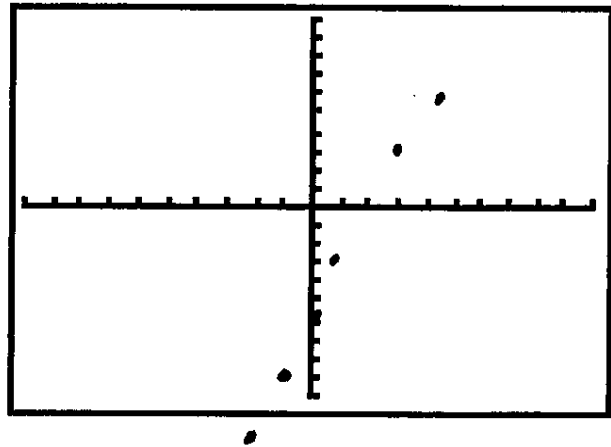
$$7 = 3$$

No

3. Complete the table for the equation:
 $3x - y = 6$

x	y	(x, y)
-2	-12	$(-2, -12)$
-1	-9	$(-1, -9)$
0	-6	$(0, -6)$
4	6	$(4, 6)$
1	-3	$(1, -3)$
3	3	$(3, 3)$

4. Plot the points in #3



$$\boxed{x = -1}$$

$$3(-1) - y = 6$$

$$-3 - y = 6$$

$$\begin{array}{r} +3 \\ -y = 9 \\ \hline -1 \end{array}$$

$$y = -9$$

$$\boxed{y = -3}$$

$$3x - (-3) = 6$$

$$3x + 3 = 6$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 3x = 3 \\ \hline 3 \end{array}$$

$$x = 1$$

$$\boxed{x = -2}$$

$$3(-2) - y = 6$$

$$-6 - y = 6$$

$$\begin{array}{r} +6 \\ -y = 12 \\ \hline -1 \end{array}$$

$$\boxed{y = -12}$$

$$\boxed{x = 0}$$

$$3(0) - y = 6$$

$$0 - y = 6$$

$$\begin{array}{r} -1y = 6 \\ \hline -1 \end{array}$$

$$y = -6$$

$$\boxed{y = 6}$$

$$3x - 6 = 6$$

$$\begin{array}{r} +6 \quad +6 \\ \hline 3x = 12 \\ \hline 3 \end{array}$$

$$x = 4$$

$$\boxed{y = 3}$$

$$3x - 3 = 6$$

$$\begin{array}{r} +3 \quad +3 \\ \hline 3x = 9 \\ \hline 3 \end{array}$$

$$x = 3$$

5. Find the x-intercept of: $y = -3x + 6$

$$\begin{array}{r|l} x & y \\ \hline 2 & 0 \end{array} \quad \begin{array}{l} 0 = -3x + 6 \\ \underline{-6} \qquad \underline{-6} \\ -6 = -3x \\ \underline{-3} \quad \underline{-3} \\ x = 2 \end{array}$$

$(2, 0)$

6. Find the y-intercept of: $2x - 3y = 12$

$$\begin{array}{r|l} x & y \\ \hline 0 & -4 \end{array} \quad \begin{array}{l} 2(0) - 3y = 12 \\ -3y = 12 \\ \underline{-3} \quad \underline{-3} \\ y = -4 \end{array}$$

$(0, -4)$

7. Find the slope of: $(-3, 2)$ and $(-5, -4)$

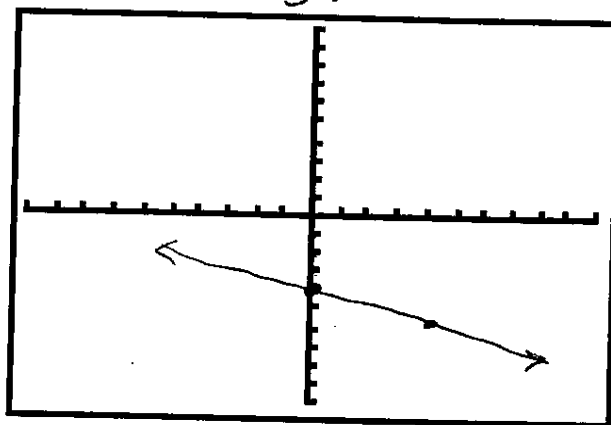
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{-4 - 2}{-5 - (-3)} = \frac{-6}{-2} = 3$$

$-5 + 3$

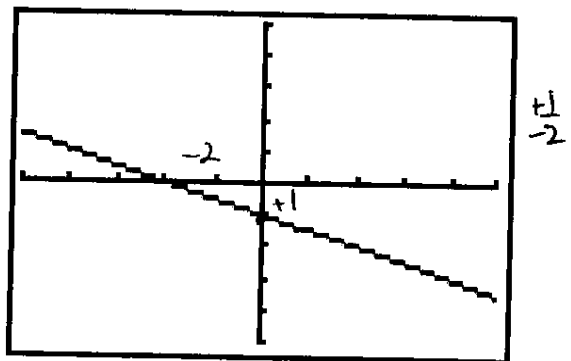
8. Graph: $y = -\frac{2}{5}x - 4$

$$m = \frac{-2 \div 5}{1 \div 5} \quad b = -4$$



9. What is the equation of the line for:

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

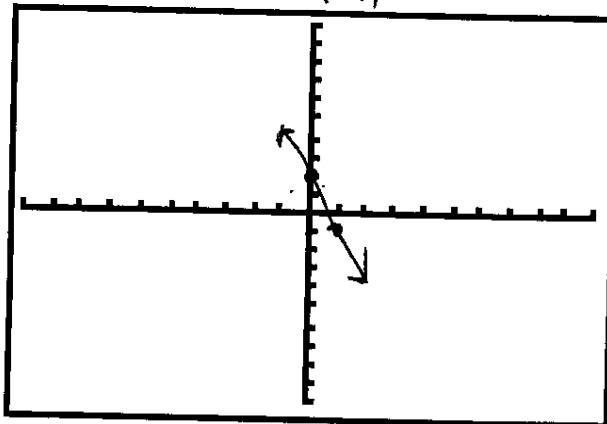


or

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

10. Graph: $y = -3x + 2$

$$\frac{-3 \div 3}{1 \div 3}$$



Questions from Chapter 4

11. Simplify: $x^5 y^3 x^6 y$

$$\boxed{x^{11} y^4}$$

12. Simplify: $\frac{10x^5 y^7 z^2}{2x^8 y z^0}$

$$\boxed{\frac{5 y^6 z^2}{x^3}}$$

13. Simplify: $(2x^2 y^6)^4 x^3 y^7$

$$16 x^8 y^{24} x^3 y^7$$

$$\boxed{16 x^{11} y^{31}}$$

14. Simplify: $\frac{x^{-3} y^5 z^{-2}}{x^0 y^{-1} z^4}$

$$\frac{y^5 y}{x^3 z^2 z^4}$$

$$\boxed{\frac{y^6}{x^3 z^6}}$$

15. Simplify: $(x^3 y^0)^{-5}$

$$\rightarrow x^{-15}$$

$$\frac{1}{x^{15}}$$

$$\left(\frac{1}{x^3 y^0}\right)^{-5}$$

$$\frac{1}{x^{15}}$$

16. Simplify: $\left(\frac{3x^{-3} y^{-2} z^7 w^0}{9y^{-5} z^{-6}}\right)^{-2}$

$$\left(\frac{1 z^7 y^5 z^6}{3 x^3 y^2}\right)^{-2}$$

$$\left(\frac{y^3 z^{13}}{3 x^3}\right)^{-2}$$

$$\left(\frac{3 x^3}{y^3 z^{13}}\right)^2$$

$$\boxed{\frac{9 x^6}{y^6 z^{26}}}$$

17. Simplify: $(5x^2 - 3x + 4) - (-2x^2 + 6x - 5)$

$$5x^2 - 3x + 4 + 2x^2 - 6x + 5$$

$$5x^2 + 2x^2 - 3x - 6x + 4 + 5$$

$$\boxed{7x^2 - 9x + 9}$$

18. Simplify: $-3x^2(2x^4 - 5x^3)$

$$-6x^6 + 15x^5$$

$$\boxed{-6x^6 + 15x^5}$$

19. Simplify: $(2x - 3)(-x + 8)$

$$-2x^2 + 16x + 3x - 24$$

$$\boxed{-2x^2 + 19x - 24}$$

20. Simplify: $(4x - 5)^2$

$$(4x - 5)(4x - 5)$$

$$16x^2 - 20x - 20x + 25$$

$$\boxed{16x^2 - 40x + 25}$$

21. Convert to scientific notation:
1,530,000

$$1.53 \times 10^6$$

22. Convert to standard notation:
 -2.5×10^{-3}

~~_____~~

$$-0.0025$$

Review Questions on the State Exam

23. Simplify: $-2[7(3x - 4) + 5x]$

$$-2[21x - 28 + 5x]$$

$$-2[26x - 28]$$

$$\boxed{-52x + 56}$$

24. Evaluate when $w = -1$: $-2w^2 + 4w - 6$

$$-2(-1)^2 + 4(-1) - 6$$

$$-2(1) - 4 - 6$$

$$-2 - 4 - 6$$

$$-6 - 6$$

$$\boxed{-12}$$

25. Solve for r: $-4(-5x+2) = 2(2x+20)$

$$\begin{array}{r} 20x - 8 = 4x + 40 \\ -4x \quad -4x \\ \hline 16x - 8 = 40 \end{array}$$

$$16x - 8 = 40$$

$$\begin{array}{r} +8 \quad +8 \\ \hline 16x = 48 \end{array}$$

$$\begin{array}{r} 16x = 48 \\ \hline 16 \quad 16 \end{array}$$

$$\boxed{x=3}$$

26. Solve for y: $\left[\frac{2}{3}y - \frac{3}{4} = 2 \right]$

$$\frac{4}{1} \cdot \frac{2}{3}y - \frac{3}{1} \cdot \frac{3}{4} = 12 \cdot 2$$

$$8y - 9 = 24$$

$$\begin{array}{r} +9 \quad +9 \\ \hline 8y = \frac{33}{8} \end{array}$$

$$\boxed{y = \frac{33}{8}}$$

27. Solve for b: $c = 4a + 2b$

$$c = 4a + 2b$$

$$\begin{array}{r} -4a \quad -4a \\ \hline c - 4a = 2b \end{array}$$

$$\frac{c-4a}{2} = \frac{2b}{2}$$

$$b = \frac{c-4a}{2} = \frac{1}{2}c - 2a$$

28. If a digital player costs \$425 after a 15% discount, what was the original cost?

$$x - .15x = 425$$

$$\begin{array}{r} .85x = 425 \\ \hline .85 \quad .85 \end{array}$$

$$\boxed{x=500}$$

$$\begin{array}{r} .85 \overline{)425} \\ \underline{.85} \\ 500 \end{array}$$

29. If 8 less than the square of a number, then the result is the product of 6 and a number. Choose the equation that could be used to find this number, x. DO NOT SOLVE THE PROBLEM, JUST SET UP THE EQUATION.

$$x^2 - 8 = 6x$$

30. Write a proportion that solves the problem: A hybrid can travel 1100 miles on 55 gallons of gasoline. How many gallons of gas are needed to travel 1925 miles? DO NOT SOLVE THE PROBLEM, JUST SET UP THE PROPORTION.

miles
gallons

$$\boxed{\frac{1100}{55} = \frac{1925}{x}}$$