Honors Math II
Pre-requisite Packet

Name Key
Period_____ Date_____

Make sure you show all of your work in this packet and clearly state your solutions.
Oh yeah, no calculators. Good luck ☺

Simplify the following expressions:

1. $4 - 3^2 \div 9 + 2$

$4 - 9 \div 9 + 2$

$4 - 1 + 2$

5

2. $3x^2 - 9x + 7x^2 + x$

$10x^2 - 8x$

3. $(5-2)^2 + 4 \div 2 \cdot 4 - 3$

$(3)^2 + 2 \cdot 4 - 3$

$9 + 8 - 3$

$17 - 3$

14

4. $-6 + \cancel{4b} + 2a^2 - \cancel{3b} + \cancel{a} + \cancel{b}$

$2a^2 + 2b + a - 6$

Use the rules of exponents to simplify the following expressions:

5. $(3x^2y^3z^0)^3$

$27x^6y^9$

6. $\frac{5x^{-2}y^4}{10xy^2}$

$\frac{y^2}{2x^3}$

Solve the following linear equations and inequalities:

7. $5 - x + 2 = 3x - 7$

$7 - x = 3x - 7$

$14 = 4x$

$x = \frac{14}{4} = \frac{7}{2}$

8. $-\frac{4}{5}x + 6 = x - 3$

$9 = \frac{9}{5}x$

$x = 5$

9. $3x - 2(2 - x) < 6 - x - 10$

$3x - 4 + 2x < 6 - x - 10$

$5x - 4 < 6 - x - 10$

$6x - 4 < -4$

$6x < 0$

$x < 0$

10. $3x + 5 - x \geq 6 + 4x - 1$

$2x + 5 \geq 5 + 4x$

$0 \geq 2x$

$x \leq 0$

11. Find the slope of the line passing through the following points: (6, -4) and (2, 0)

$m = \frac{-4-0}{6-2} = \frac{-4}{4} = -1$

12. Label the type of slope that each of the following lines has:

a)

0 slope

b) 

neg slope

c) 

pos slope

d) 

undefined slope

13. State the slope for each of the following lines:

a) $x = 3$

undefined

b) $y = 3x - 4$

$m = 3$

c) $y + 2x = 5$

$m = -2$

d) $y = -2$

$m = 0$

14. Which sets of lines from below are **a) parallel or b) perpendicular**? Note: There may be more than one answer for each.

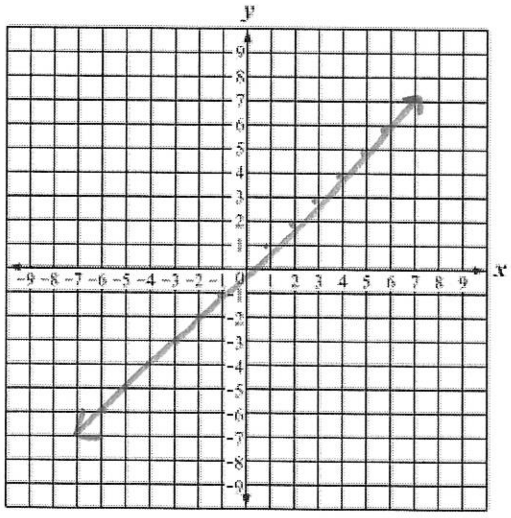
A) $y = \frac{1}{3}x + 6$ B) $y = 3x - 8$ C) $y = -3x + 7$ D) $y = -\frac{1}{3}x - 2$ E) $y = \frac{1}{3}x$

Parallel: A & E

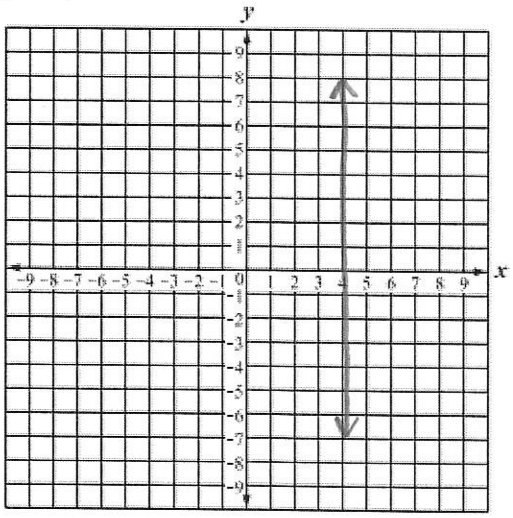
Perpendicular: A & C B & D C & E

Graph the following linear equations:

15. $y = x$

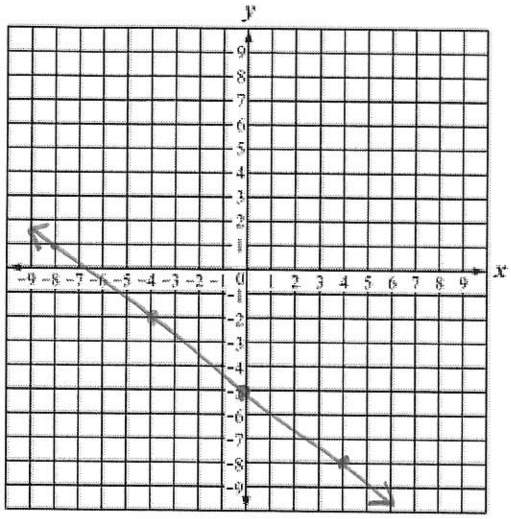


16. $x = 4$



Graph the following linear equation and inequality:

17. $y = -\frac{3}{4}x - 5$

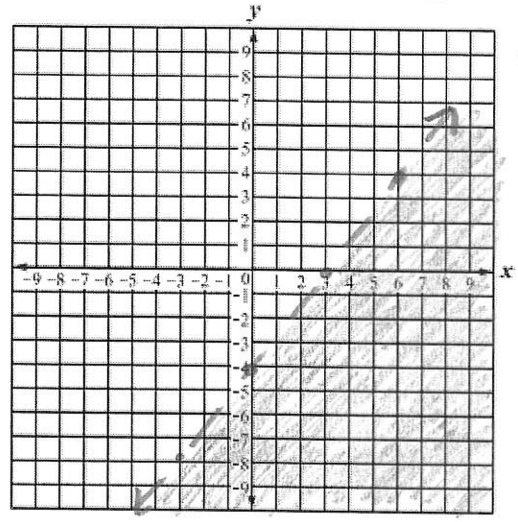


18. $4x - 3y > 12$

$4x - 3y > 12$

$\frac{-3y}{-3} > \frac{-4x}{-3} + \frac{12}{-3}$

$y < \frac{4}{3}x - 4$



Use the given information to write a linear equation in slope-intercept form.

19. slope is 2, point (3, 1)

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

$y - 1 = 2x - 6$

$y = 2x - 5$

20. slope is 5, y-intercept (0, -6)

$y = 5x - 6$

21. points (0, 6) and (3, 12)

$m = \frac{6 - 12}{0 - 3} = \frac{-6}{-3} = 2$

$y = 2x + 6$

22. points (-2, -3) and (-2, 5)

$m = \frac{-3 - 5}{-2 + 2} = \frac{-8}{0}$

m = undefined

23. *Write an equation of any line parallel to* $x = 4$.

$x = 6$

24. Write an equation of any line perpendicular to $y = 8$.

$x = 2$

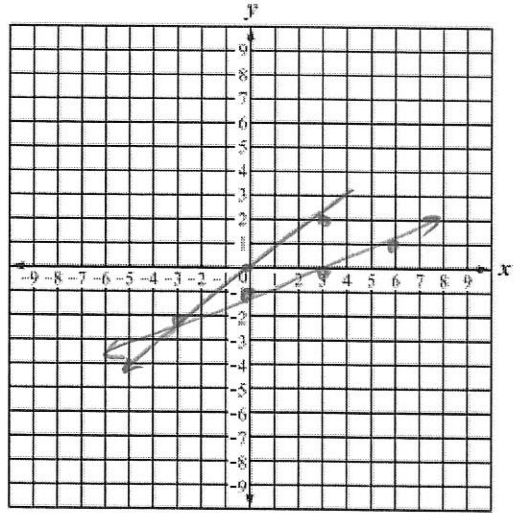
25. Solve the following system graphically.

$$\begin{cases} 3y - x = -3 \\ y = \frac{2}{3}x \end{cases}$$

$3y = x - 3$

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

$(-3, -2)$



Evaluate the following expressions at the indicated values.

26. $\frac{10x-4y}{3y-1}$ when $x = 2$ and $y = 3$

$\frac{(10)(2) - 4(3)}{3(3) - 1} = \frac{20-12}{8} = \frac{8}{8} = 1$

27. $-5a^3 + |2ab| - ab$ when $a = -1$ and $b = 4$

$-5(-1)^3 + |2(-1)(4)| - (-1)(4)$

$5 + 8 + 4$

17

Simplify:

28. $-\sqrt{16}$ -4

29. $\sqrt{120}$ $= 2\sqrt{30}$

$4 \cdot 30$

30. $-|-12|$ $= -12$