Name: _____

## *Advanced Algebra II Assignment*
## *Summer 2016*

## Directions:

This packet should be completed by the first day of school.
Make sure to bring the packet to class on the first day of school.

This assignment will be checked for *completeness,* not accuracy. All problems should be done or well attempted. Show work on every problem in the space provided. Write neatly and box final answers.

You will be assessed on the topics presented in this packet.
You will be given an opportunity to ask some questions in class in the days prior to the assessment.

Answers will be provided in September.

**Solve each equation.**

1) $-96 = -3(-8v + 8)$

2) $2(8b - 6) = 116$

**Solve each proportion.**

3) $\dfrac{12}{r+1} = -\dfrac{8}{r-1}$

4) $\dfrac{n+4}{n-11} = \dfrac{10}{3}$

5) $\dfrac{x-5}{x-1} = -\dfrac{7}{8}$

6) $-\dfrac{5}{9} = \dfrac{m+2}{m+10}$

**Find the slope of the line through each pair of points.**

7) $(-2, 15), (-2, 0)$

8) $(-18, 6), (-18, 18)$

**Find the slope of a line parallel to each given line.**
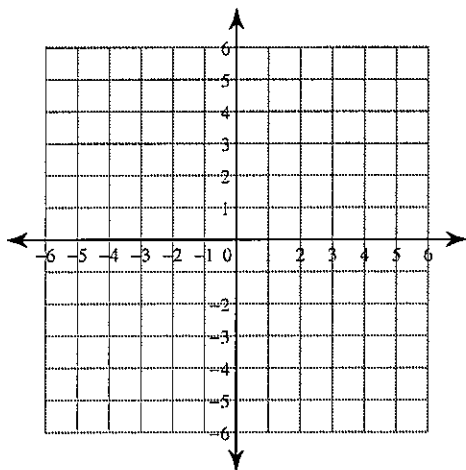
9) $y = x + 2$

10) $y = 2x + 3$

**Find the slope of a line perpendicular to each given line.**
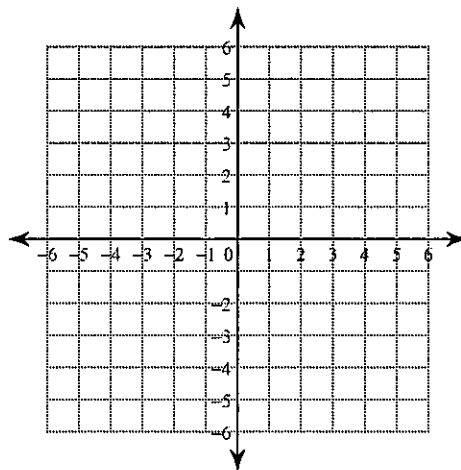
11) $y = -x + 4$

12) $y = 7x + 5$

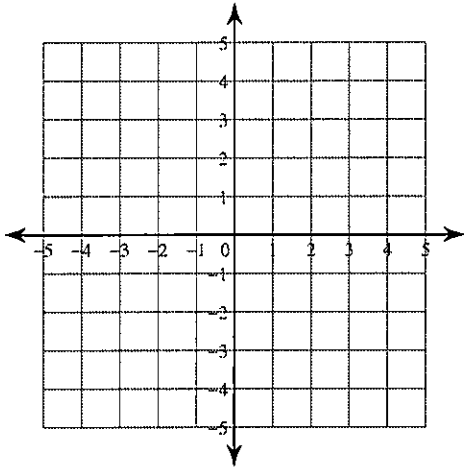**Sketch the graph of each line.**

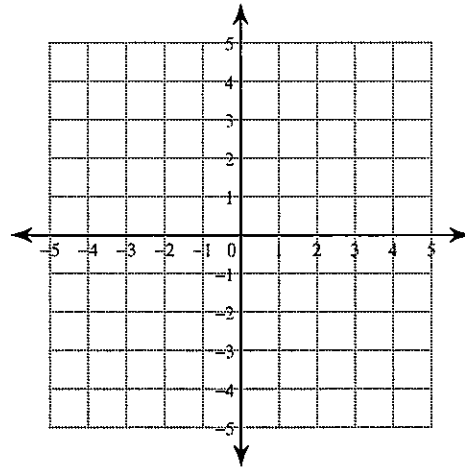13) $y = -\dfrac{3}{5}x - 1$

14) $y = \dfrac{2}{3}x - 2$

**Solve each system by graphing.**

15) $y = -\dfrac{1}{4}x + 4$

$\quad\ \ y = -\dfrac{1}{4}x + 2$



16) $y = -2x + 3$

$\quad\ \ y = -\dfrac{2}{3}x - 1$



**Solve each system by substitution.**

17) $2x + 2y = -12$
$\quad\ \ x + y = -6$

18) $x - 6y = -13$
$\quad\ \ 2x - 12y = -26$

**Solve each system by elimination.**

19) $-10x - 14y = -10$
$\quad\ \ -6x - 7y = -6$

20) $8x + 9y = -1$
$\quad\ \ -3x - y = -2$

**Solve each equation by factoring.**

21) $r^2 - 7r + 12 = 0$

22) $n^2 - n - 30 = 0$

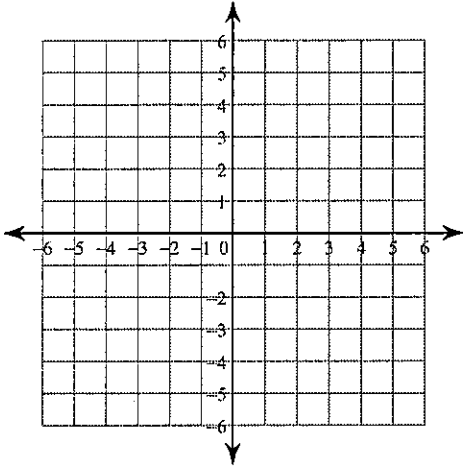23) $x^2 - 4x - 5 = 0$

24) $b^2 - 6 = 5b$

25) $x^2 - 6x = 7$

26) $-3x^2 + 15x + 35 = 3x - 4x^2$
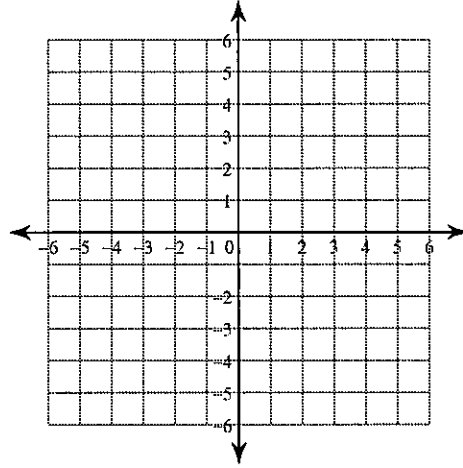
27) $3x^2 - 70 - 3x = 2x^2 - 6 - 3x$

28) $k^2 - 7k - 47 = -4k - 7$
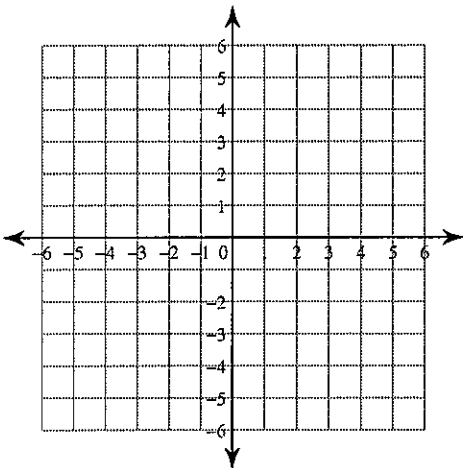
**Sketch the graph of each linear inequality.**
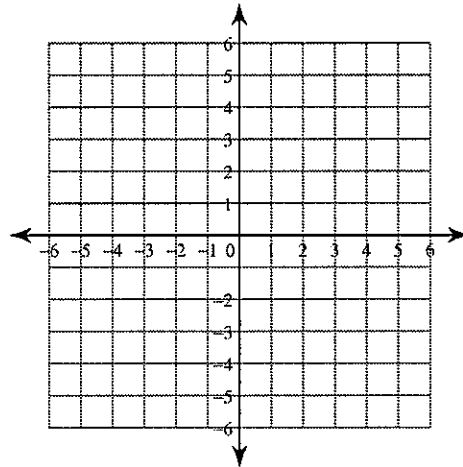
29) $y \le -\dfrac{1}{3}x - 3$

30) $y \ge \dfrac{1}{3}x + 5$

31) $y \ge \dfrac{4}{5}x - 1$

32) $y > 2x - 4$

**Simplify. Your answer should contain only positive exponents.**

33) $3y^{-4} \cdot 3x^4$

34) $3u^2v^{-2} \cdot 4u^0v^{-4} \cdot 4u^{-3}v^{-4}$

**Simplify.**

35) $-3\sqrt{6} - \sqrt{2} - \sqrt{18}$

36) $-\sqrt{5} - 3\sqrt{20} - 2\sqrt{6}$

37) $-\sqrt{20} - \sqrt{8} - 2\sqrt{18}$

38) $-5\sqrt{2} \cdot 5\sqrt{6}$

39) $\left(-5\sqrt{5} - 3\sqrt{3}\right)\left(\sqrt{5} + 2\sqrt{3}\right)$

40) $\left(-1 + 2\sqrt{2}\right)\left(1 + \sqrt{2}\right)$