

Name_____

**Intermediate Algebra
Holmdel High School
Summer Assignment**

The following packet is for students beginning Intermediate Algebra II in the fall. This packet includes topics covered in Algebra I.

- This packet will be collected and graded on the first day of school.
- All work must be shown for each problem in order to receive credit.
- The packet will count as the first homework assignment in marking period 1 and will be graded for completion. Students must attempt each problem.



Intermediate Algebra

Solve each equation.

1) $90 = 4 + 2(5n + 8)$

2) $-3k + 11 = -4 + 6(k - 8)$

3) $-33 + 7x = -5(6x - 5) + 8x$

4) $-4 + 3|10 + 3n| = 38$

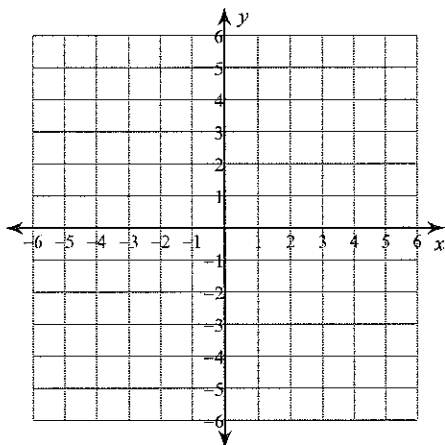
Solve each equation for the indicated variable.

5) $z = b - \frac{m}{a}$, for a

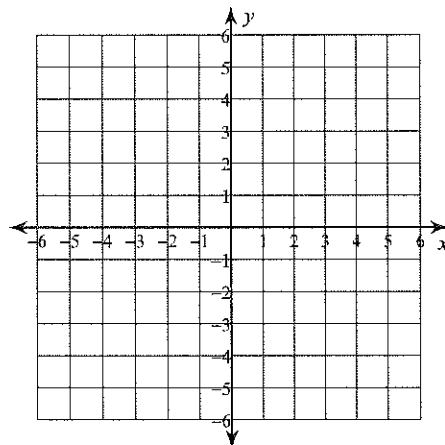
6) $u = kx + y$, for x

Sketch the graph of each line.

7) $x + 5y = 25$



8) $2x - 3y = 9$



Write the slope-intercept form of the equation of the line through the given points.

9) through: $(-4, -5)$ and $(-2, -2)$

10) through: $(-5, 2)$ and $(3, -4)$

Write the slope-intercept form of the equation parallel or perpendicular to the given line.

11) through: $(-1, 2)$, parallel to $y = -\frac{1}{2}x - 2$

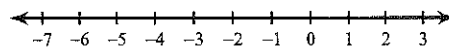
12) through: $(-1, -4)$, perp. to $y = -\frac{1}{7}x + 3$

Solve each inequality and graph its solution.

13) $5(6v - 8) + 6 > -184$

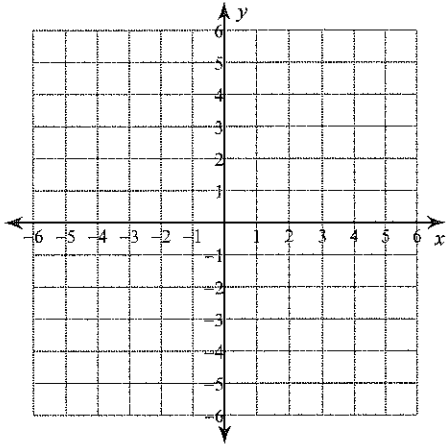


14) $-7(-5n - 7) \geq 5n + 19$

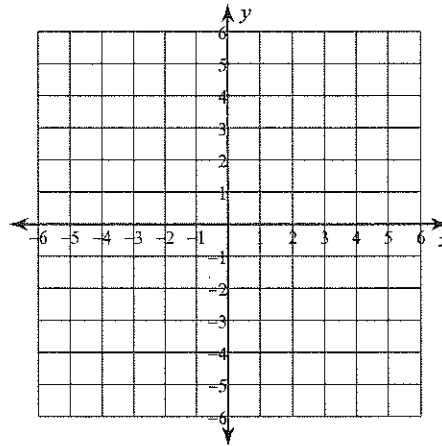


Sketch the graph of each linear inequality.

15) $y < -5x - 1$

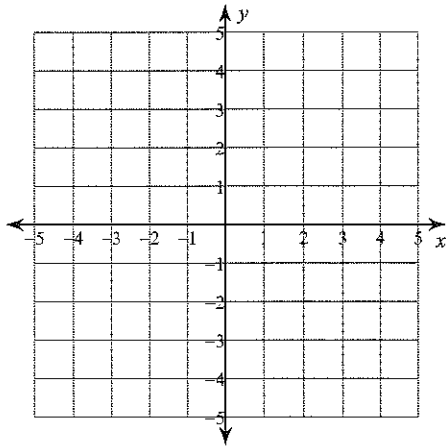


16) $y \leq \frac{3}{4}x - 3$

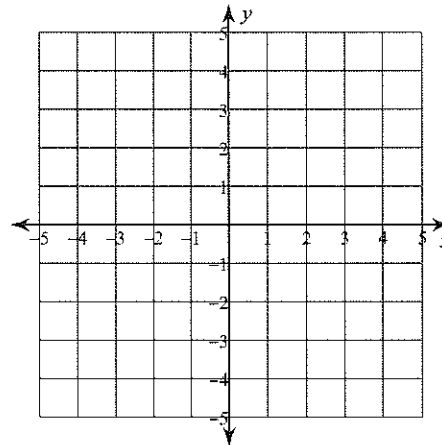


Solve each system.

17) $3x - y = 4$
 $x - 2y = -2$



18) $y \leq \frac{1}{3}x - 2$
 $y < 2x + 3$



Solve the system using the specified method.

19) Substitution:

$$x - 3y = 15$$

$$8x + 7y = -4$$

20) Elimination:

$$-3x + 4y = 1$$

$$2x + 4y = -14$$

21) Elimination:

$$-10x + 3y = -10$$

$$-2x - 10y = -2$$

22) Elimination:

$$7x - 2y = 25$$

$$3x - 3y = -15$$

Simplify. Your answer should contain only positive exponents.

23) $x^2 \cdot 4x^3$

24) $4x^2 \cdot 2x^2 \cdot x^4$

25) $(b^3)^3$

26) $(2n^3)^2$

27) $\frac{2k^{-2}}{2k}$

28) $\frac{2x^0}{4x^2}$

29) $v^{-4} \cdot (v^2)^{-2}$

30) $(b^3 \cdot 2b^{-3})^4$

Simplify each expression.

31) $(x^4 - 4x^3 + 6) + (5x^3 - x - 5)$

32) $(5v^3 - 5v^2 - 1) - (2v^3 + 8 - 2v^2)$

33) $5x(2x^2 + 7x + 4)$

34) $(7v - 2)(4v - 5)$

35) $(8n - 5)(8n + 7)$

36) $(3x - 3)(6x^2 - x - 7)$

Factor completely.

37) $6b^4 - 3b^2 + 15b$

38) $40x^4y - 24x^4$

39) $x^2 + x - 56$

40) $2a^2 - 8a - 42$

$$41) 3v^2 - 26v - 40$$

$$42) 7m^2 - 29m - 30$$

$$43) x^2 - 100$$

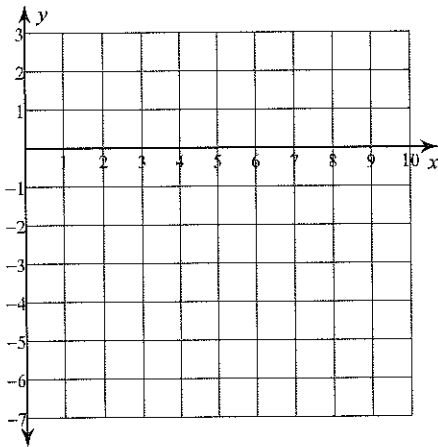
$$44) 81b^2 - 4$$

$$45) p^2 + 20p + 100$$

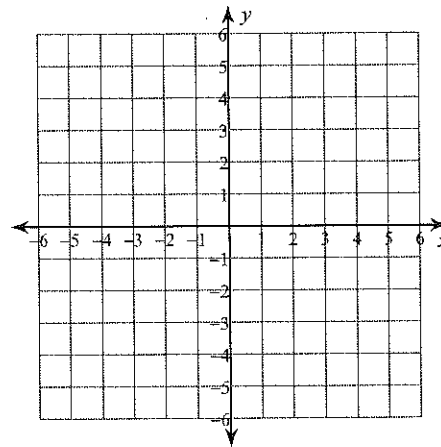
$$46) 35x^3 - 56x^2 + 40x - 64$$

Sketch a graph of each function.

$$47) y = -2x^2 + 8x - 6$$



$$48) y = |x - 2| - 1$$



Solve the quadratic using the specified method.

49) Zero Product Property:

$$(2v + 3)(7v - 3) = 0$$

50) Quadratic Formula:

$$6b^2 - 7b - 18 = 0$$

51) Square Root Method:

$$3k^2 + 9 = 222$$

52) Completing the Square:

$$n^2 + 4n - 92 = 0$$

Simplify.

53) $\sqrt{48m^2n^3}$

54) $5\sqrt{2n} \cdot 3\sqrt{6n}$

55) $4\sqrt{5}(\sqrt{2} + \sqrt{10})$

56) $(\sqrt{5} + \sqrt{2})^2$

57) $(2\sqrt{2} + 5\sqrt{3})(\sqrt{2} + \sqrt{3})$

58) $\frac{\sqrt{10}}{\sqrt{3a}}$

59) $-\sqrt{27} - 2\sqrt{3}$

60) $3\sqrt{27} - 4\sqrt{7} + 3\sqrt{63}$

Solve each equation. Remember to check for extraneous solutions.

61) $6\sqrt{-5 - 5x} = 30$

62) $\sqrt{-45 + 14x} = x$

Simplify.

63) $\frac{n^2 + n - 6}{9n^2 - 18n}$

64) $\frac{x^2 + 2x - 48}{x^2 - 16x + 60}$

Simplify each expression.

65) $\frac{v^2 - 7v - 8}{v^2 - 2v - 3} \cdot \frac{9v - 27}{v - 8}$

66) $\frac{x^2 - 1}{x^2 + 5x + 4} \div \frac{4x + 16}{x^2 + 8x + 16}$