Incoming Eighth Grade Students -

Please complete this packet to return on the first day of school. Use your notes from this past school year to help you. Don't forget to show your work.

Enjoy your summer!

Name_____

Evaluating Expressions

Date_____ Period____

Evaluate each using the values given.

1) $y \div 2 + x$; use $x = 1$, and $y = 2$

2) $a - 5 - b$; use $a = 10$, and $b = 4$

3) $p^2 + m$; use $m = 1$, and $p = 5$

4) $y + 9 - x$; use $x = 1$, and $y = 3$

5) $m + p \div 5$; use $m = 1$, and $p = 5$

6) $y^2 - x$; use $x = 7$, and $y = 7$

7) $z(x + y)$; use $x = 6$, $y = 8$, and $z = 6$

8) $x + y + y$; use $x = 9$, and $y = 10$

9) $p^3 + 10 + m$; use $m = 9$, and $p = 3$

10) $6q + m - m$; use $m = 8$, and $q = 3$

11) $p^2 m \div 4$; use $m = 4$, and $p = 7$

12) $y - \left(z + z^2\right)$; use $y = 10$, and $z = 2$

13) $z - (y \div 3 - 1)$; use $y = 3$, and $z = 7$

14) $(y + x) \div 2 + x$; use $x = 1$, and $y = 1$

Algebra 1 0507

Name_____

Extra Practice: Equations w/ variable on both sides

Date_____

Solve each equation.

1) $-3 + 5a = 4a - 10$

2) $-2k = k - 7 - 8$

3) $-16 + 3n = -8 - 5n$

4) $4n - 1 = 6n + 8 - 8n + 15$

5) $1 - 3x = 3x + 1$

6) $4r + 8 + 5 = -15 - 3r$

7) $-12 - 4b = 4 - 2b$

8) $3n - 15 = 7n + n$

17) $-40 + 2n = 4n - 8(n + 8)$

18) $40 - x = 4(-3 - 6x) + 6$

19) $7x - 8(-x + 7) = -16 + 7x$

20) $-8x + 32 = 4(-2 - 4x)$

21) $-7 - 2x = 7(x + 8)$

22) $-6(2r - 2) = -8r + 40$

23) $5(-2 - 3n) = -33 + 8n$

24) $-6 + 3p = 8p + 2(1 - 3p)$

33) $-1 + 3(x + 2) = 5(1 + 8x)$

34) $-6(7v - 5) - 3 = 3(v - 6)$

35) $-6p + 7(1 + 3p) = 2(7 + 8p)$

36) $-5(x + 2) = -(-5x + 1) - x$

37) $4(-4 + m) = -6(m - 4)$

38) $-5(-4r - 6) = 5(6 - r)$

39) $3n - 2(-2 - 7n) = 4(1 - 8n)$

40) $6(1 - 4r) + 3r = -3(3r - 2) - 6r$

Exponent Rules

Product Rule

If $a \neq 0$, and m and n are real numbers, then

$$a^m \cdot a^n = a^{m+n}$$

Multiplying with same base, keep the base and add the exponents

Ex: $x^5 \cdot x^7 = x^{5+7} = x^{12}$

Power-to-Power Rule

If $a \neq 0$, and m and n are real numbers, then

$$(a^m)^n = a^{m \cdot n}$$

A base to a power, to another power, keep the base and multiply the exponents

Ex: $(x^5)^3 = x^{5 \cdot 3} = x^{15}$

Product-to-Power Rule

If $a \neq 0$ and $b \neq 0$, and m is a real number, then

$$(ab)^m = a^m b^m$$

When a product is raised to a power, raise each factor to the power

Ex: $(xy)^3 = x^3 y^3$

Zero Exponent

If $a \neq 0$, then

$$a^0 = 1$$

Any nonzero number to the zero power equals 1.

Ex: $(5x)^0 = 1$

Ex: $5x^0 = 5 \cdot x^0 = 5 \cdot 1 = 5$

Quotient Rule

If $a \neq 0$, and m and n are real numbers, then

$$\frac{a^m}{a^n} = a^{m-n}$$

Dividing with same base, keep the base and subtract the exponents

Ex: $\frac{x^{12}}{x^5} = x^{12-5} = x^7$

Quotient-to-Power Rule

If $a \neq 0$ and $b \neq 0$, and m is a real number, then

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$$

Quotient to power, raise both numerator and denominator to power

Ex: $\left(\frac{x}{y}\right)^4 = \frac{x^4}{y^4}$

Negative Exponent

If $a \neq 0$, and m is a positive real number, then

$$a^{-m} = \frac{1}{a^m} \quad \text{and} \quad \frac{1}{a^{-m}} = a^m$$

Base to negative power moves from numerator to denominator, or vice versa, the sign of power changes.

Ex: $3^{-3} = \frac{1}{3^3} = \frac{1}{27}$

Ex: $\frac{1}{x^{-5}} = x^5$

Kuta Software - Infinite Algebra 1

Name_____

Properties of Exponents

Date_____ Period_____

Simplify. Your answer should contain only positive exponents.

1) $2m^2 \cdot 2m^3$

2) $m^4 \cdot 2m^{-3}$

3) $4r^{-3} \cdot 2r^2$

4) $4n^4 \cdot 2n^{-3}$

5) $2k^4 \cdot 4k$

6) $2x^3y^{-3} \cdot 2x^{-1}y^3$

7) $2y^2 \cdot 3x$

8) $4v^3 \cdot vu^2$

9) $4a^3b^2 \cdot 3a^{-4}b^{-3}$

10) $x^2y^{-4} \cdot x^3y^2$

11) $\left(x^2\right)^0$

12) $\left(2x^2\right)^{-4}$

13) $\left(4r^0\right)^4$

14) $\left(4a^3\right)^2$

15) $\left(3k^4\right)^4$

16) $(4xy)^{-1}$

Name_____

Slope

Date_____ Period_____

Find the slope of each line.

1)

2)

3)

4)

5)

6)

7)

8)

Algebra 1   Name_____
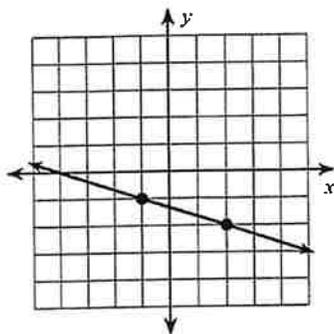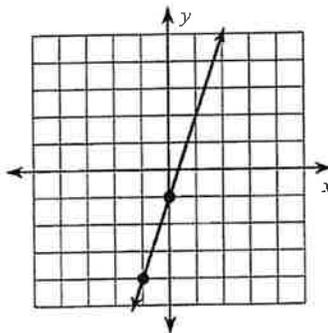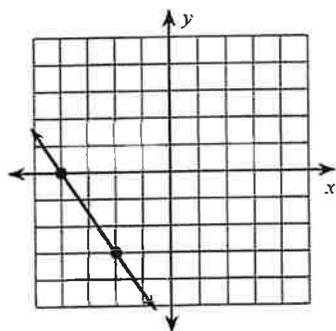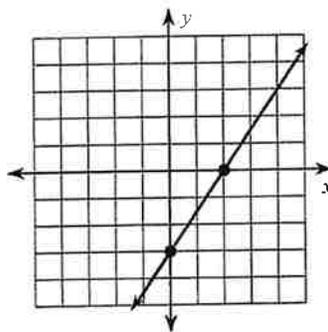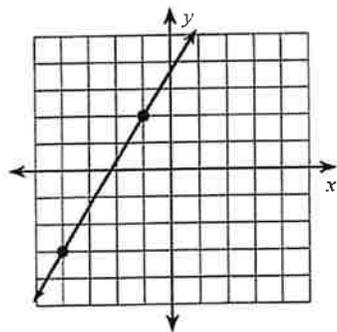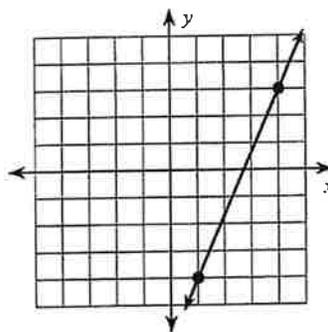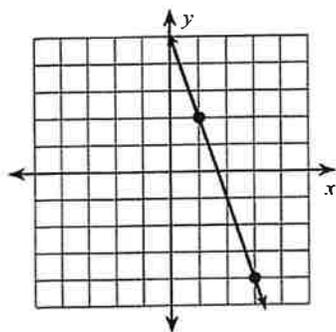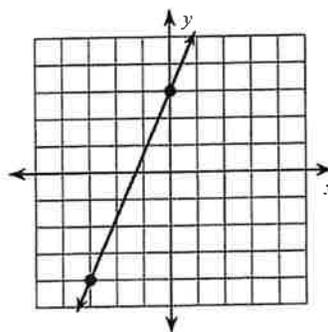
Slope-intercept Form Worksheet
                                    Date_____ Period_____

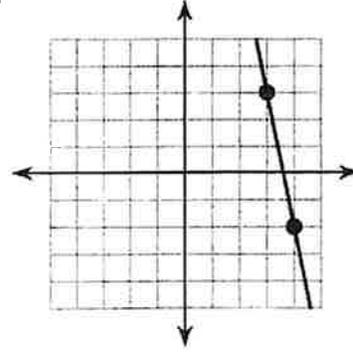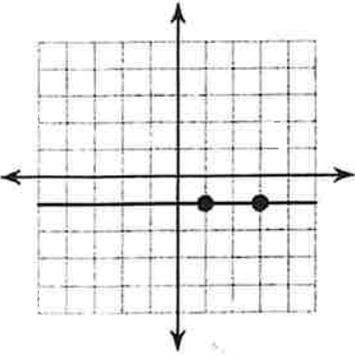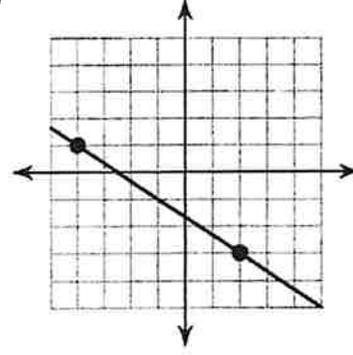**Find the slope of each line.**

1)
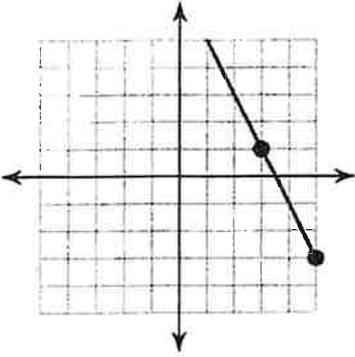
2)
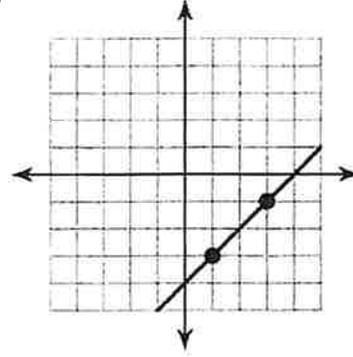
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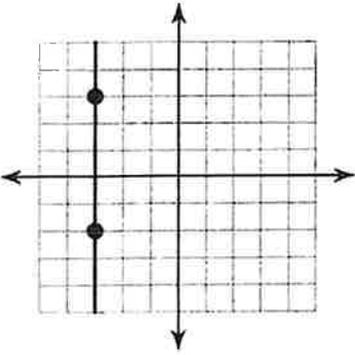
4)

5)

6)

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

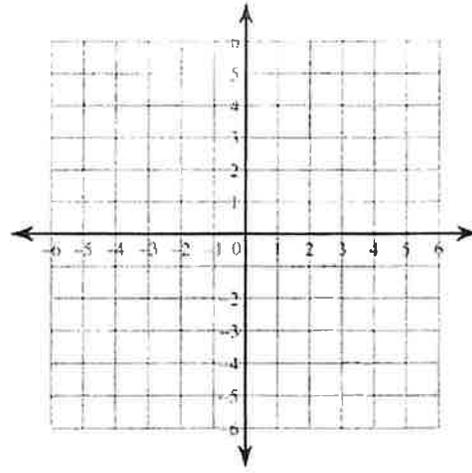7) $(-14, -20), (-5, 9)$

8) $(-1, 1), (5, -6)$
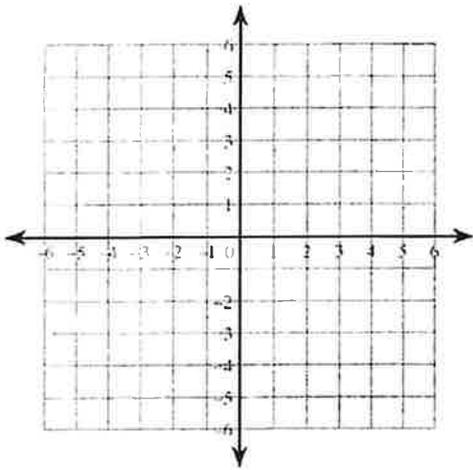
9) $(15, 9), (-14, -9)$
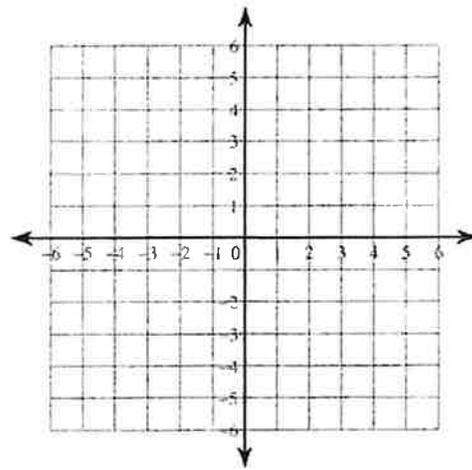
10) $(2, -12), (18, 15)$

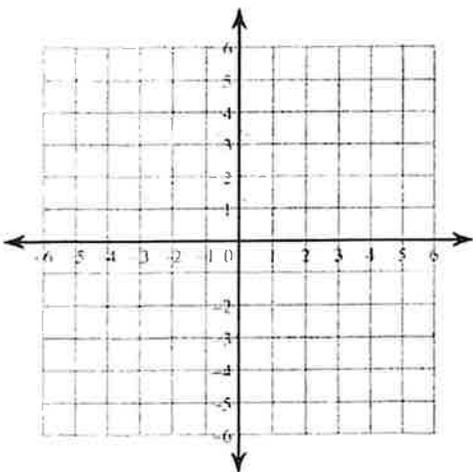23) $y = -3x + 3$
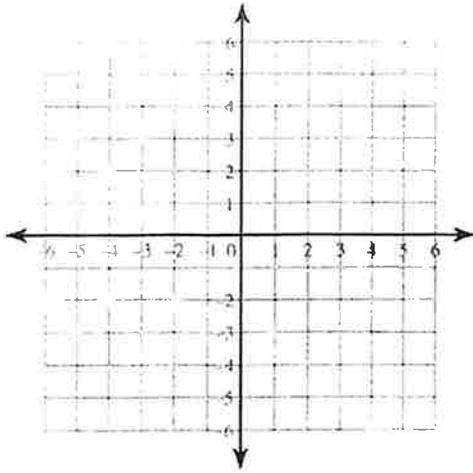
24) $y = -2x - 2$

25) $y = 2x - 4$

26) $y = \dfrac{5}{2}x - 3$

27) $y = \dfrac{1}{2}x - 1$

28) $y = \dfrac{5}{3}x + 5$