Kuta Software - Infinite Algebra 2

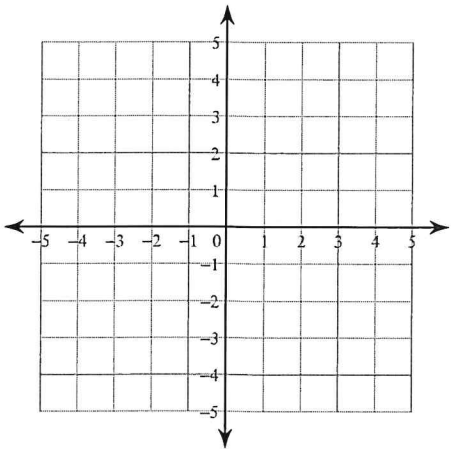
Name_____

Systems of Two Equations

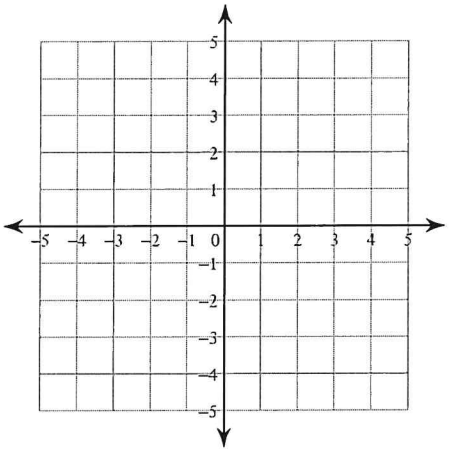
Date_____ Period____

Solve each system by graphing.

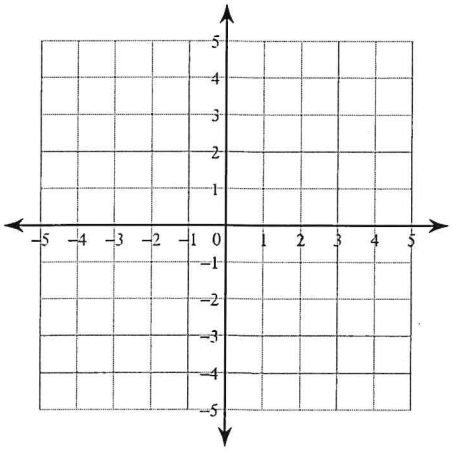
1) $y = -3x + 4$
$y = 3x - 2$



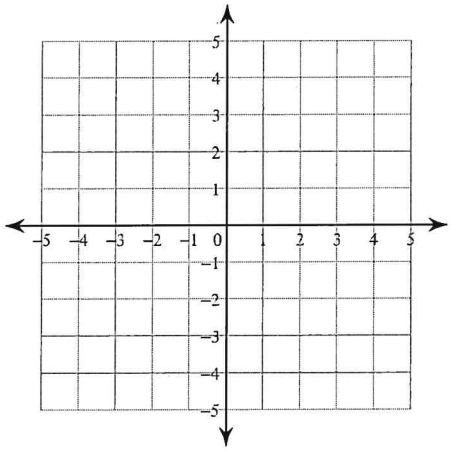
2) $y = x + 2$
$x = -3$



3) $x - y = 3$
$7x - y = -3$



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



Solve each system by substitution.

5) $y = 4x - 9$
$y = x - 3$

6) $4x + 2y = 10$
$x - y = 13$

7) $y = -5$
$5x + 4y = -20$

8) $x + 7y = 0$
$2x - 8y = 22$

9) $6x + 8y = -22$
$y = -5$

10) $-7x + 2y = 18$
$6x + 6y = 0$

11) $7x + 2y = -19$
$-x + 2y = 21$

12) $3x - 5y = 17$
$y = -7$

13) $-7x + 4y = 24$
$4x - 4y = 0$

14) $4x - y = 20$
$-2x - 2y = 10$

Solve each system by elimination.

15) $8x - 6y = -20$
$-16x + 7y = 30$

16) $6x - 12y = 24$
$-x - 6y = 4$

17) $-8x - 10y = 24$
$6x + 5y = 2$

18) $-24 - 8x = 12y$
$1 + \frac{5}{9}y = -\frac{7}{18}x$

19) $-4y - 11x = 36$
$20 = -10x - 10y$

20) $-9 + 5y = -4x$
$-11x = -20 + 9y$

21) $0 = -2y + 10 - 6x$
$14 - 22y = 18x$

22) $-16y = 22 + 6x$
$-11y - 4x = 15$

23) $-16 + 20x - 8y = 0$
$36 = -18y - 22x$

24) $-\frac{5}{7} - \frac{11}{7}x = -y$
$2y = 7 + 5x$

Critical thinking questions:

25) Write a system of equations with the solution $(4, -3)$.

Addition and Subtraction in Scientific Notation

Because Scientific Notation is built on the concept of multiplication, shortcuts exist for performing both multiplication and division with numbers written in scientific notation. For addition and subtraction, however, there are no shortcuts. So, here are TWO different step-by-step procedure for you to follow:

Method One: Convert and Compute

1. Convert each number back to decimal notation.
2. Add or subtract as indicated.
3. Convert your final answer back into scientific notation.

Try this approach on these problems.

$2.3 \times 10^4 + 4.5 \times 10^3$	$4.5 \times 10^{-3} - 8.6 \times 10^{-2}$	$8.1 \times 10^4 - 2.1 \times 10^5$

Method Two: Make them ALIKE!

1. Subtract the two exponents to find out how far apart they are. This number is how far you will move the decimal point in the number with the SMALLEST exponent.
2. In the number with the smaller exponent, move the decimal that number of places to the left and rewrite the new decimal with the new (matching) exponent.
3. Now that the exponents match, add or subtract the decimals as indicated.
4. Make sure your final answer is still in scientific notation.

Example :

Evaluate $2 \times 10^3 + 3.6 \times 10^4$

Solution:

$$2 \times 10^3 + 3.6 \times 10^4$$
$$= 0.2 \times 10^4 + 3.6 \times 10^4$$
$$= (0.2 + 3.6) \times 10^4$$
$$= 3.8 \times 10^4$$

Try this approach on these problems.

$2.3 \times 10^3 + 4.5 \times 10^2$	$2.3 \times 10^6 - 1.8 \times 10^4$	$4.5 \times 10^{-2} + 8.1 \times 10^{-4}$

Name _____ Date _____ Class _____

MATH HANDBOOK TRANSPARENCY WORKSHEET 2

Operations with Scientific Notation

Use with Appendix B, Operations with Scientific Notation

1. Perform the following operations and express the answers in scientific notation.

a. $(1.2 \times 10^5) + (5.35 \times 10^6)$

b. $(6.91 \times 10^{-2}) + (2.4 \times 10^{-3})$

c. $(9.70 \times 10^6) + (8.3 \times 10^5)$

d. $(3.67 \times 10^2) - (1.6 \times 10^1)$

e. $(8.41 \times 10^{-5}) - (7.9 \times 10^{-6})$

f. $(1.33 \times 10^5) - (4.9 \times 10^4)$

2. Perform the following operations and express the answers in scientific notation.

a. $(4.3 \times 10^8) \times (2.0 \times 10^6)$

b. $(6.0 \times 10^3) \times (1.5 \times 10^{-2})$

c. $(1.5 \times 10^{-2}) \times (8.0 \times 10^{-1})$

d. $\dfrac{7.8 \times 10^3}{1.2 \times 10^4}$

e. $\dfrac{8.1 \times 10^{-2}}{9.0 \times 10^2}$

f. $\dfrac{6.48 \times 10^5}{(2.4 \times 10^4)(1.8 \times 10^{-2})}$

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