

Name _____

Class time: 11:30 12:30

Score _____

(circle one)

You will need to do your work on another sheet of paper! Please hand that in with this worksheet!

Solve the equation.

1) $3x + 2(3x - 6) = 3 - 6x$

1) _____

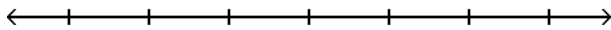
2) $\frac{1}{2}(6x - 8) = \frac{1}{4}(16x - 12)$

2) _____

Solve the inequality. Write the solution set in interval notation and graph it.

3) $-2(2y + 15) < -6y - 14$

3) _____



Solve the equation.

4) $\frac{x + 12}{4} = \frac{x + 5}{3}$

4) _____

Solve.

5) How do you find the x-intercept of the graph of a linear equation in two variables?

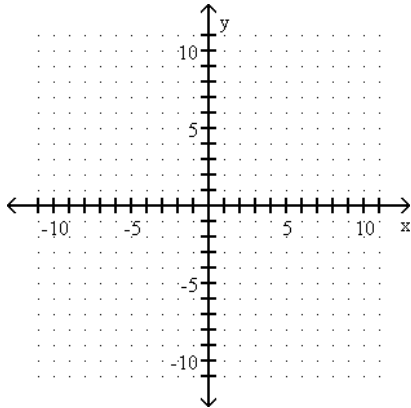
A) Let $x = 0$.B) Let $y = 0$.

5) _____

Graph the linear equation. Give the x- and y-intercepts.

6) $3x + y = -3$

6) _____



Write an equation for the line. Give the final answer in slope-intercept form.

7) Through $(3, 4)$, $m = -3$

7) _____

Simplify by writing the expression with positive exponents. Assume that all variables represent nonzero real numbers.

8) $\left(\frac{tz-4}{t-2z}\right)^{-3}$

8) _____

9) $\frac{(3x^6y^2)^{-3}(9xy-1)^2}{(x^4y)^{-5}}$

9) _____

Add or subtract as indicated.

10) $(5x^2y + 6xy) - (3x^2y + 3xy^2) - (4xy - 6xy^2)$

10) _____

Find the product.

11) $(3y - 4)(9y^2 + 12y + 16)$

11) _____

Perform the division.

12) $(x^2 + 2x - 35) \div (x + 7)$

12) _____

Factor completely. If the polynomial is prime, say so.

13) $18m^2 - 21m + 5$

13) _____

14) $x^2 - x - 56$

14) _____

15) $81x^2 - 4$

15) _____

16) $y^3 - 64$

16) _____

Write the rational expression in lowest terms.

17) $\frac{y^2 + 2y - 15}{y^2 - 4y - 45}$

17) _____

Multiply or divide. Write the answer in lowest terms.

18) $\frac{2t^2 - 5t - 12}{3t^2 - 2t - 5} \cdot \frac{3t^2 + 13t - 30}{t^2 + 2t - 24}$

18) _____

Add or subtract. Write the answer in lowest terms.

19) $\frac{x}{x^2 - 16} - \frac{4}{x^2 + 5x + 4}$

19) _____

Solve.

20) $\frac{-5x}{3x + 18} = \frac{7x}{6x + 36} + \frac{2x - 1}{x + 6}$

20) _____

Solve the problem.

21) Find $f(2)$ when $f(x) = 2x^2 + 5x - 3$.

21) _____

For the given pair of functions, find the requested function.

22) $f(x) = 5x - 4$, $g(x) = -9x + 6$; $(f + g)(x)$

22) _____

For the pair of functions, find the product $(fg)(x)$.

23) $f(x) = 4x + 2$, $g(x) = x^2 + 2x - 7$

23) _____

For the pair of functions, find the quotient $\left(\frac{f}{g}\right)(x)$ and give any x -values that are not in the domain of the quotient function.

24) $f(x) = x^2 + 9x + 20$, $g(x) = x + 5$

24) _____

Find $(f \circ g)(x)$ for the given functions $f(x)$ and $g(x)$.

25) $f(x) = 7x + 15$ and $g(x) = 5x - 1$

25) _____

Solve the system by the graphing, substitution, or elimination method.

26) $x - 5y = -13$
 $-6x - 6y = -66$

26) _____

Simplify. Assume that all variables represent positive real numbers.

27) $\sqrt{32k^7q^8}$

27) _____

28) $\sqrt[3]{27a^8b^5}$

28) _____

29) $\frac{-3}{\sqrt{21}}$

29) _____

30) $\sqrt{108} + 9\sqrt{192} - 8\sqrt{147}$

30) _____