

Do Now

mult coeff · Add exponents

1) The function  $g(x) = 5x - 1$  is defined on the domain  $4 \leq x \leq 7$ . Give the range of this function.

2nd Graph  
to get table

x	g(x)
4	19
5	24
6	29
7	34

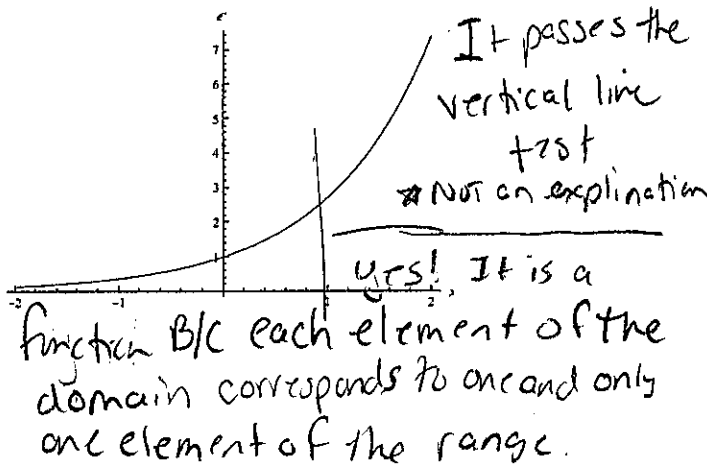
$19 \leq y \leq 34$

$19 \leq g(x) \leq 34$

2) Multiply:  $\frac{1}{2}x^2(4x^2 - 5x + 3)$

$$2x^4 - \frac{5}{2}x^3 + \frac{3}{2}x^2$$

3) Is the following a function?



4) Solve the inequality below. Then state the greatest possible integer value for x in the solution set.

$$2(6x + 2) < 6x + 16$$

$$\Downarrow$$

$$12x + 4 < 6x + 16$$

$$\begin{array}{r} -6x \\ \hline 6x + 4 < 16 \end{array}$$

$$\begin{array}{r} -4 \\ \hline 6x < 12 \end{array}$$

$$\begin{array}{r} \frac{6x}{6} < \frac{12}{6} \\ \hline x < 2 \end{array}$$

1 is the greatest possible integer value for x

5) a) Peggy enrolled herself in a local gym. Her monthly plan will charge her \$45 fee and an additional \$32 per month for each extra person she brings. Write a function which describes her monthly cost c, as a function of extra people, e.

$m = 32$     $c(e) = m \cdot \text{monthly bill}$     $c(e) = 32e + 45$     $f(x) = (b)$

$b = 45$     $y = 32x + 45$     $c = 32e + 45$

b) Using the function you wrote, what would her bill be for a month that she brought 3 extra people.

$c = 32e + 45$

$c = 32(3) + 45$

$c = 96 + 45$

$c = 141$

or

$c(e) = 32e + 45$

$c(3) = 32(3) + 45$

$c(3) = 96 + 45$

$c(3) = 141$

$e = 3$

$\$141$

6) What is the equation of a line in point-slope form with a slope of 4, that passes through the point (-7, 3)?

$x_1, y_1$    point-slope formula    $y - y_1 = m(x - x_1)$

$y - 3 = 4(x + 7)$

\* Don't forget to change the sign of the coordinates

Distribute the Negative sign

7) Simplify:  $(4x^2 - 3x + 2) - (2x^2 + 7x - 5)$

$$4x^2 - 3x + 2 - 2x^2 - 7x + 5$$

$$\boxed{2x^2 - 10x + 7}$$

m A ms

8) Simplify:  $(x - 8)^2$  → write twice & then double distribute

$$(x - 8)(x - 8)$$
$$x^2 - 8x - 8x + 64$$
$$\boxed{x^2 - 16x + 64}$$

9) Factor:  $x^2 - x - 30$

Trinomial b/c it's 3

$$\boxed{(x - 6)(x + 5)}$$

terms and there are no common factors

Steps: Find 2 #'s that multiply to -30 and add to -1

10) Factor:  $100x^2 - 9$

DOPS b/c it's a binomial with subtraction and perfect squares

$$\boxed{(10x + 3)(10x - 3)}$$

Steps: Take the √ of the terms and make conjugates

11) Factor completely:  $3x^3 - 27x$

take

GCMF  $3x(x^2 - 9)$

$$\text{DOPS } \boxed{3x(x + 3)(x - 3)}$$

12) Solve for x:  $4(xy + 2) = 15$

$$4xy + 8 = 15$$
$$-8 \quad -8$$

$$\frac{4xy}{4y} = \frac{7}{4y}$$

$$\boxed{x = \frac{7}{4y}}$$

13) Solve for x:  $\frac{x-3}{4} + \frac{1}{8} = \frac{5}{8}$

$$\frac{-\frac{1}{8} \quad -\frac{1}{8}}{\quad}$$
$$x \left( \frac{x-3}{4} \right) = \left( \frac{4}{8} \right) 4$$

$$x - 3 = 2$$
$$+3 \quad +3$$

$$\boxed{x = 5}$$

or

$$\frac{x-3}{4} = \frac{4}{8}$$
$$8(x-3) = 16$$
$$8x - 24 = 16$$
$$+24 \quad +24$$
$$8x = 40$$
$$\frac{8x}{8} = \frac{40}{8}$$

$$\boxed{x = 5}$$