

Top 10 V9 Key

Thursday, May 22, 2014

Top 10⁺V9

Period:

Name:

1) Simplify $3 - 4^2 + 5 \cdot 2 - (4 - 6 \cdot 5)$

$$3 - 16 + 10 - (-26)$$

$$3 - 16 + 10 + 26$$

$$\underline{-13} + 10 + 26$$

$$\underline{-3} + 26$$

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2) Simplify $4(5x - 2) - 6(3x - 4)$

$$20x - 8 - 18x + 24$$

$$20x - 18x - 8 + 24$$

2x + 16

3) Solve $3 \cdot \frac{-2x - 6}{3} = -4 \cdot 3$

$$-2x - 6 = -12$$

$$\underline{+6} \quad \underline{+6}$$

$$-2x = -6$$

$$\underline{-2} \quad \underline{-2}$$

x = 3

4) Solve and graph on a number line

$$3x - 5 > 7(x + 4) - 1$$

$$3x - 5 > 7x + 28 - 1$$

$$3x - 5 > 7x + 27$$

$$\underline{-7x} \quad \underline{-7x}$$

$$-4x - 5 > 27$$

$$\underline{+5} \quad \underline{+5}$$

$$-4x > 32$$

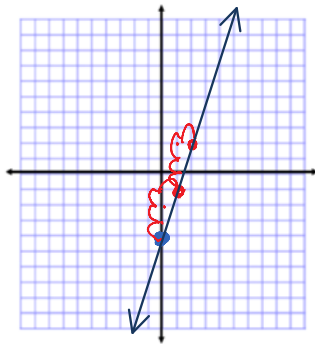
$$\underline{-4} \quad \underline{-4}$$

x < -8

5) Graph the linear equation

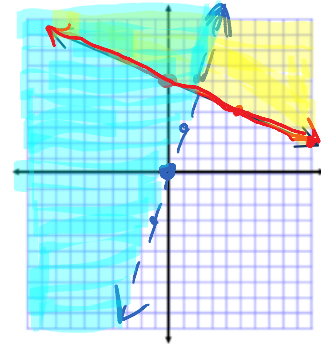
y = 3x - 4

m = $\frac{3}{1}$
b = -4



6) Graph the system of linear inequalities

$y \geq -\frac{2}{5}x + 6$
 $y > 3x$



m = $-\frac{2}{5}$
b = 6
m = $\frac{3}{1}$
b = 0

7) Solve the system of linear equations

y = 2x - 4
3x - y = 6

$$3x - (2x - 4) = 6$$

$$3x - 2x + 4 = 6$$

$$x + 4 = 6$$

$$\underline{-4} \quad \underline{-4}$$

x = 2

$$y = 2x - 4$$

$$y = 2(2) - 4$$

$$y = 4 - 4$$

y = 0

(2, 0)

8) Multiply the polynomial

$(2x - 3)(4x - 1)$

$$2x(4x - 1) - 3(4x - 1)$$

$$8x^2 - 2x - 12x + 3$$

8x² - 14x + 3

9) Identify the slope and y-intercept

$$\begin{array}{r} 5x - 2y = -18 \\ -5x \quad \quad -5x \\ \hline -2y = -5x - 18 \\ -2 \quad \quad -2 \quad \quad -2 \\ \hline y = \frac{5}{2}x + 9 \end{array}$$

$m = \frac{5}{2}$
 $b = 9$

10) Write the equation of the line in slope-intercept form that passes through the points $(-4, -11)$ and $(6, 4)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - (-11)}{6 - (-4)} = \frac{15}{10} = \frac{3}{2}$$

$$y = \frac{3}{2}x + b$$

$$4 = \frac{3}{2}(6) + b$$

$$4 = \frac{18}{2} + b$$

$$4 = 9 + b$$

$$b = -5$$

$y = \frac{3}{2}x - 5$

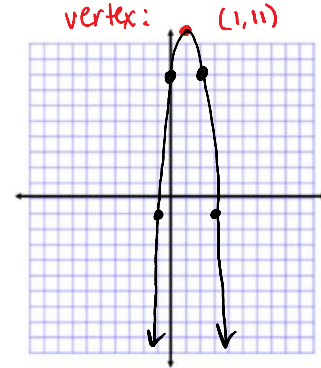
11) Graph the quadratic function

$$y = -3x^2 + 6x + 8$$

① $x = \frac{-b}{2a} = \frac{-6}{2(-3)} = 1$

② $y = -3(1)^2 + 6(1) + 8 = -3 + 6 + 8 = 11$

③ $1(a) = -3$
 $3(a) = -9$
 $5(a) = -15$



12) Find the zeroes of the quadratic function

$$x^2 - 7x + 10 = 0$$

$a=1, b=-7, c=10$

a.c		
10	x	
-5	+	-2
	-7	
	b	

$$0 = (x-5)(x-2)$$

$$x-5=0 \text{ and } x-2=0$$

$$+5 \quad +5 \qquad +2 \quad +2$$

$x = 5 \text{ and } x = 2$

13) Simplify using only positive exponents

$$\left(\frac{-2x^3y^{-2}}{4x}\right)^2 = \left(\frac{-2x^3}{4xy^2}\right)^2 = \left(\frac{-\cancel{2}x^{\cancel{3}}\cdot\cancel{x}\cdot\cancel{x}\cdot\cancel{x}}{\cancel{4}\cdot\cancel{x}\cdot y\cdot y}\right)^2 = \left(\frac{-1x^2}{2y^2}\right)^2 = \left(\frac{-1x^2}{2y^2}\right)\left(\frac{-1x^2}{2y^2}\right) = \frac{-1\cdot-1\cdot x^2\cdot x^2}{2\cdot 2\cdot y^2\cdot y^2} = \frac{x^4}{4y^4}$$

14) In a standard deck of playing cards, what is the probability of pulling a card that is either a king or a diamond?

of diamonds: 13
 # of kings: 4

of cards that are a diamond or a king: 16

not 17 bc the king of diamonds is double counted

$\frac{16}{52} = \frac{4}{13}$

15) Simplify

$$\sqrt{12} - 5\sqrt{3} = 2\sqrt{3} - 5\sqrt{3}$$

$$\sqrt{4\cdot 3} - 5\sqrt{3}$$

$$2\sqrt{3} - 5\sqrt{3}$$

$-3\sqrt{3}$