

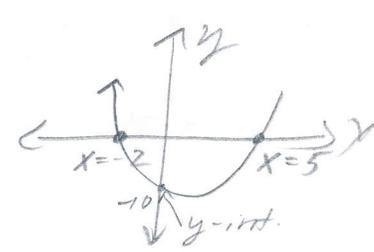
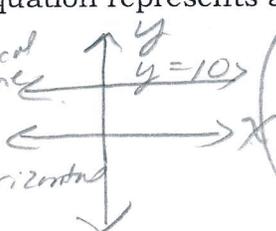
What You Need To Know For the 2nd Quarter?

Topics:

- Equations (multi-step equations, variable on both sides, combining like terms, use the distributive property)
- Polynomials (add, subtract, multiply, divide, gcf, factoring)
- Radicals (add, subtract, multiply, divide, and radical equations)
- Factoring (x-box method, grouping method, slide, divide, bottoms up method)
- Linear Equations (slope, graphing a line, y-intercept, write an equation of a line)
- Systems of Equations (Graphing & algebraically)
- Word Problems (Coin, Rate, Age, Perimeter, Area, Consecutive Integers, Number)
- Properties of Real Numbers
- Number Sense
- Quadratics (word problems and finding the roots/zeros)
- Quadratic-linear systems (graphically and algebraically)
- Graphing Inequalities and Systems of Inequalities

2nd Quarter is on Monday, January 23 & Tuesday, Jan. 24

Directions: Refer to notes to help you with questions you don't remember how to do or Google it. Show work in your notebook if needed.

<p>1. What is the solution set of $m^2 = 10 + 3m$?</p> <p>$m^2 - 3m - 10 = 0$ $(m + 2)(m - 5) = 0$ $m = -2 \quad \quad m = 5$</p> <p><i>set = 0</i></p>  <p>(1) <u>{5, -2}</u> (2) {2, -5} (3) {3, -10} (4) {3, 10}</p>	<p>2. Written in <u>simplest form</u>, the binomial $2x^2 - 50$ can be expressed as</p> <p>$\frac{2x^2 - 50}{2 = gcf}$ $2(x^2 - 25)$ <i>DOTS</i> $2(x - 5)(x + 5)$</p> <p>(1) $2(x - 5)(x - 5)$ (2) $(x - 5)(x + 5)$ (3) <u>$2(x - 5)(x + 5)$</u> (4) $2x(x - 50)$</p>
<p>3. Which equation represents a line parallel to the x-axis?</p> <p><i>vertical line</i> $x = 5$ <i>horizontal</i> $y = 10$</p>  <p>(1) $x = 5$ (2) <u>$y = 10$</u> (3) $x = \frac{1}{3}y$ (4) $y = 5x + 17$</p> <p><i>N P</i> $\frac{N 0}{2}$</p>	<p>4. The expression $\frac{6\sqrt{20}}{3\sqrt{5}}$ is equivalent to</p> <p>$\frac{6\sqrt{20}}{3\sqrt{5}}$ <i>coefficients & sqrt</i> $\frac{2\sqrt{4}}{1}$ <i>simplify</i> $2 \cdot 2 = 4$</p> <p>1) $3\sqrt{15}$ 2) $2\sqrt{15}$ 3) 8 (4) <u>4</u></p>
<p>5. The expression $(-4a^3b)^2$ is equivalent to</p> <p><i>mult by itself</i> $(-4a^3b)(-4a^3b)$ $16a^6b^2$</p> <p>1) $-16a^6b^2$ (2) <u>$16a^6b^2$</u> 3) $16a^5b^2$ 4) $8a^6b^2$</p> <p><i>MIP³</i></p>	<p>6. Which property of real numbers is illustrated by the equation below: $52 + (27 + 36) = (52 + 27) + 36$</p> <p>1) commutative property (2) <u>associative property</u> 3) distributive property 4) identity property of addition</p>

7. The sum of $6\sqrt{50}$ and $6\sqrt{2}$ written in simplest radical form is

- 1) $6\sqrt{52}$
- 2) $12\sqrt{52}$
- 3) $17\sqrt{2}$
- 4) $36\sqrt{2}$

$6\sqrt{50} + 6\sqrt{2}$
 $6 \cdot 5\sqrt{2} + 6\sqrt{2}$
 $30\sqrt{2} + 6\sqrt{2}$
 $36\sqrt{2}$

9. The number of calories burned while jogging varies directly with the number of minutes spent jogging. If Madison burns 150 calories by jogging for 20 minutes, how many calories does she burn by jogging for 30 minutes?

- 1) 100
- 2) 180
- 3) 200
- 4) 225

$\frac{150}{20} = 7.5$
 $y = 7.5x$
 $y = 7.5(30)$
 $y = 225 \text{ cal}$

11. One root of the equation $2x^2 = x + 15$ (keep x^2 positive)

~~$\frac{5}{-1}$~~

$2x^2 - x - 15 = 0$

$2x^2$	$-6x$	$+15$
$+5x$	-15	

- 1) $\frac{5}{2}$
- 2) $\frac{3}{2}$
- 3) 3
- 4) -3

$(x-3)(2x+5) = 0$
 $2x+5=0$
 $2x = -5$
 $\frac{2x}{2} = \frac{-5}{2}$
 $x = -\frac{5}{2}$

8. The area of a rectangle is represented by $6y^6 - 18y^3 - 12y^2$ and the width is represented by $-3y^2$. What is the length of the rectangle?

- 1) $2y^4 - 6y^2 - 4y$
- 2) $3y^4 + 6y + 4$
- 3) $-2y^4 + 6y + 4$
- 4) $-2y^3 - 6y^2 - 4y$

$\frac{6y^6 - 18y^3 - 12y^2}{-3y^2}$
 $-2y^4 + 6y + 4$

10. The width of a rectangle is 3 yards less than its length. The perimeter is 130 yards. What equation can be used to find the length and width of the rectangle?

- 1) $130 = x + x - 3$
- 2) $130 = 2x + 2(3 - x)$
- 3) $130 = x(x - 3)$
- 4) $130 = 2x + 2(x - 3)$

$p = 2l + 2w$
 $130 = 2x + 2(x - 3)$

12. Sean's part-time job pays him \$155 a week. If he has already saved \$375, what is the minimum number of weeks he needs to work in order to have enough money to buy a dirt bike for \$900?

- 1) 8
- 2) 9
- 3) 3
- 4) 4

$155w + 375 \geq 900$
 -375
 $155w \geq 525$
 $\frac{155w}{155} \geq \frac{525}{155}$
 $w \geq 3.387$

13. Simplify the expression: $2(x+4)^2 - 3x$

- 1) $2x^2 - 3x + 32$
- 2) $4x^2 + 29x + 64$
- 3) $-x + 16$
- 4) $2x^2 + 13x + 32$

$2(x+4)(x+4) - 3x$
 $2(x^2 + 8x + 16) - 3x$
 $2x^2 + 16x + 32 - 3x$
 $2x^2 + 13x + 32$

14. Factor Completely: $6x^3 - 2x^2 - 4x$

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

$2x(3x^2 - x - 2)$
 $2x(3x + 2)(x - 1)$
 $2x(3x - 2)(x + 1)$

15. What is the slope of the line that passes through the points (2, -3) and (5, 1)?

- 1) $-\frac{2}{3}$
- 2) $\frac{2}{3}$
- 3) $-\frac{4}{3}$
- 4) $\frac{4}{3}$

$m = \frac{4}{3}$

x	y
2	-3
5	1

16. The area of a rectangle is $8x^2 + 6x - 9$. If the length is $2x + 3$, what is the width of the rectangle?

- 1) $4x + 3$
- 2) $4x - 3$
- 3) $2x - 9$
- 4) $2x + 6$

$8x^2 + 6x - 9 = A$
 $(2x + 3)(4x - 3)$

Which point is on the line $4y - 2x = 0$?

$$+2x+2x$$

$$\frac{4y}{4} = \frac{2x}{4}$$

$$y = \frac{1}{2}x$$

$$-1 = \frac{1}{2}(-2)$$

- 1) (-2, -1)
- 2) (-2, 1)
- 3) (-1, -2)
- 4) (1, 2)

18. The expression $\frac{9x^4 - 27x^6}{3x^3}$ is equivalent to

- 1) $3x(1-3x)$
- 2) $3x(1-3x^2)$
- 3) $3x(1-9x^5)$
- 4) $9x^3(1-x)$

$$3x - 9x^3$$

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

19. What is the value of n in the equation $0.6(10 - n) = 3.6$?

$$6(10 - n) = 36$$

$$60 - 6n = 36$$

$$-60 \quad -60$$

$$-6n = -24$$

$$-6 \quad -6$$

$$n = 4$$

- 1) -0.4
- 2) 5
- 3) -4
- 4) 4

20. If $6x^2 - 4x + 7$ is subtracted from $3x^2 - 4x - 12$, what is the difference?

$$3x^2 - 4x - 12$$

$$-6x^2 + 4x - 7$$

$$-3x^2 - 19$$

- 1) $3x^2 + 19$
- 2) $3x^2 - 8x - 5$
- 3) $3x^2 - 19$
- 4) $-3x^2 - 19$

21. What is the solution of the system of equations $2x - 5y = 11$ and $-2x + 3y = -9$?

$$2x - 5y = 11$$

$$-2x + 3y = -9$$

$$-7y = 2$$

$$y = -\frac{2}{7}$$

$$2x - 5(-\frac{2}{7}) = 11$$

$$2x - 5(-1) = 11 \quad x = 3$$

$$2x + 5 = 11$$

$$-5 \quad -5 \quad 2x = 6$$

$$x = 3$$

- 1) (-3, -1)
- 2) (-1, 3)
- 3) (3, -1)
- 4) (3, 1)

22. Which value of x is the solution of $\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$?

get rid of den

$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$$

mult equation by 15

$$6x + 5 = 7x - 2$$

$$-6x \quad -6x$$

$$5 = x - 2$$

$$+2 \quad +2$$

$$7 = x$$

- 1) $\frac{3}{5}$
- 2) $\frac{31}{26}$
- 3) 3
- 4) 7

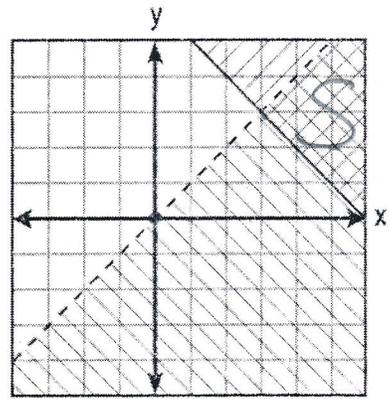
23. The greatest common factor of $4a^2b$ and $6ab^3$ is

$$2ab \mid 4a^2b \quad 6ab^3$$

gcf (what they have in common)

- 1) $2ab$
- 2) $2ab^2$
- 3) $12ab$
- 4) $24a^3b^4$

24. Which point is in the solution set of the system of inequalities shown on the accompanying graph?



- 1) (0, 0)
- 2) (3, 3)
- 3) (5, 2)
- 4) (2, 3)