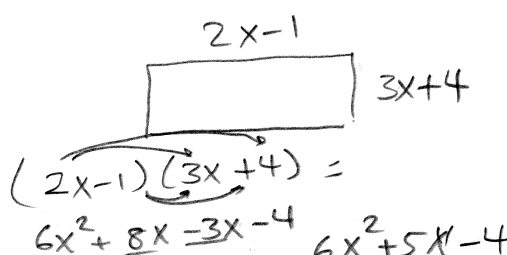



Name: Key

Practice Test Unit 1+ Unit 2: Polynomials, Equations and Inequalities.

You must show all work for complete credits. The test will be for a full block and it will cover unit 1 and unit 2. There will be test corrections but you will only receive 5 points back and only if the STUDY GUIDE PORTFOLIO is done.

<p>1) Express the following as a trinomial. $(x + 1)^2$?</p>	$(x+1)(x+1)$ $x^2 + \cancel{x} + \cancel{x} + 1$ $x^2 + 2x + 1$
<p>2) Find the sum of $4x^2 - 3x + 6$ and $-7x^2 + 3x + 6$</p> <ol style="list-style-type: none"> $7x^2 + 6x + 12$ $-3x^2 + 6x + 12$ $3x^2 - 12$ $-3x^2 + 12$ 	$-3x^2 + 12$
<p>3) James is given a rectangular piece of paper. If the length is represented by $(2x - 1)$ and the width is represented by $(3x + 4)$, then the paper has a total area represented by:</p> <ol style="list-style-type: none"> $5x^2 + 9x - 4$ $5x + 3$ $10x + 6$ $6x^2 + 5x - 4$ 	
<p>4) The paper has a total perimeter equals to</p> <ol style="list-style-type: none"> $5x^2 + 9x - 4$ $5x + 3$ $10x + 6$ $6x^2 + 5x - 4$ 	$2x-1 + 3x+4 + 2x-1 + 3x+4$ $10x + 6$
<p>5) If $A = 4x^2 + 5x - 1$ and $B = -2x^2 - 3x + 7$, then $A - B$ equals</p> <ol style="list-style-type: none"> $-6x^2 - 8x + 8$ $6x^2 + 8x - 8$ $-6x^2 - 2x + 6$ $6x^2 - 2x + 6$ 	$(4x^2 + 5x - 1) - (-2x^2 - 3x + 7)$ $4x^2 + 5x - 1 + 2x^2 + 3x - 7$ $6x^2 + 8x - 8$
<p>6) What is the product of $3x^4 y^2$ and $2xy^3$?</p>	$(3x^4 y^2)(2x^1 y^3)$ $6x^5 y^5$
<p>7) Simplify $x^2 + 3(x - 4) - x(x - 1) + 2x$</p>	$x^2 + 3x - 12 - x^2 + x + 2x$ $6x - 12$

2x

<p>8) Which expression represents "8 less than the product of 2 and x"?</p> <p>1. $2(x - 8)$ 3. $2x - 8$ 2. $2 + x - 8$ 4. $8 - 2x$</p>	<p>$2x - 8$</p>
<p>9) Which of the following values is in the solution set of $-5 < x \leq 7$?</p> <p>1. 9 3. -5 2. -7 4. 7</p>	
<p>10) An expression of the fifth degree is written with a leading coefficient of six and a constant of seven. Which expression is correctly written for these conditions?</p> <p>1. $6x^5 + x^4 + 7$ 3. $7x^6 - 6x^4 + 5$ 2. $6x^7 - x^5 + 5$ 4. $7x^5 + 2x^2 + 6$</p>	<p>$6x^8$ +7 ↓ constant</p>
<p>11) The value of y in the equation $2(0.03y + 100) = 5(0.006y + 70)$</p> <p>1. 500 2. $1,666\bar{6}$ 3. 5,000 4. $18,333\bar{3}$</p>	<p>$0.03y = \frac{+150}{0.03}$ $y = 5000$</p>
<p>12) Natasha is planning a school celebration and wants to have live music and food for everyone who attends. She has found a band that will charge her \$750 and a caterer who will provide snacks and drinks for \$2.25 per person. If her goal is to keep the cost at most \$ 1200. Write an appropriate inequality to find the number of students she can have.</p>	<p>$750 + 2.25x \leq 1200$</p>
<p>13) $x + y = y + x$ is an example of the which property</p> <p>1. Associative 2. Distributive 3. Commutative 4. Multiplicative property of equality</p>	<p>Switch order of terms</p>
<p>14) The expression $(-2x^4y^3)^2$ is equivalent to</p> <p>1. $4x^8y^6$ 3. $-4x^8y^6$ 2. $-2x^6y^5$ 4. $-4x^6y^5$</p>	<p>$(-2x^4y^3)(-2x^4y^3)$ $4x^8y^6$</p>
<p>15) Solve for x and provide the number property that is appropriate in each step.</p> <p>$\frac{x+8}{15} = \frac{x}{5}$</p> <p>$5(x+8) = 15x$ $5x + 40 = 15x$ $-5x \quad -5x$ $40 = 10x$ $\frac{40}{10} = \frac{10x}{10}$</p> <p>4 = x</p>	

22) Marcus has quarter, dimes and nickels in his change jar. He has seven more dimes than quarters, and twice as many nickels as quarters. If he has \$2.95, how many of each coin does he have?

$$25X + 10(7+X) + 5(2X) = 295$$

$$25X + 70 + 10X + 10X = 295$$

$$45X + 70 = 295$$

$$\begin{array}{r} 45X + 70 = 295 \\ -70 \quad -70 \\ \hline 45X = 225 \\ \hline 45 \quad 45 \\ \hline X = 5 \end{array}$$

5 Quarters, 12 dimes, 10 Nickels.

Quarters	X	25X
Dime	7+X	10(7+X)
Nickel	2X	5(2X)
		295

24) The distance a free falling object has traveled can be modeled

by the equation $d = \frac{1}{2} at^2$, where a is acceleration due to gravity and t is the amount of time the object has fallen. What is t in terms of a and d ?

1. $t = \sqrt{\frac{2d}{a}}$

2. $t = \left(\frac{2d}{a}\right)^2$

3. $t = \sqrt{\frac{2d}{a}}$

4. $t = \left(\frac{2d}{a}\right)^2$

$$(2) d = \frac{1}{2} at^2 (2)$$

$$\frac{2d}{a} = \frac{at^2}{a}$$

$$\sqrt{\frac{2d}{a}} = \sqrt{t^2}$$

$$\sqrt{\frac{2d}{a}} = t$$

25) The sum of the ages of the three Band brothers is 63. If their ages can be represented as consecutive integers, what is the age of the Older brother?

1st X
2nd X+1
3rd X+2

$$(X) + (X+1) + (X+2) = 63$$

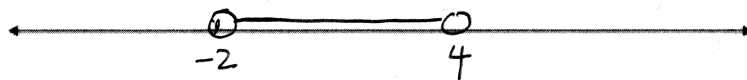
$$3X + 3 = 63$$

$$\begin{array}{r} 3X + 3 = 63 \\ -3 \quad -3 \\ \hline 3X = 60 \\ \hline 3 \quad 3 \\ \hline X = 20 \end{array}$$

20, 21, 22

26) Graph the following inequalities;

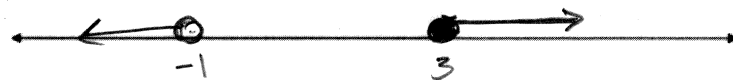
$$-2 < x < 4$$



$$1 \leq x \leq 5$$



$$x \geq 3 \text{ or } x < -1$$



16) If $abx - 5 = 0$, what is x in terms of a and b ?

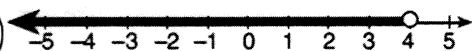
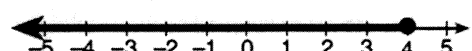
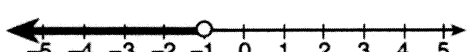

- $+5 \quad +5$
 1. $x = \frac{5}{ab}$ 3. $x = -\frac{5}{ab}$
 2. $x = 5 - ab$ 4. $x = ab - 5$

$$\frac{abx}{ab} = \frac{5}{ab}$$

$$x = \frac{5}{ab}$$

15) Which graph represents the solution set of $2x - 5 < 3$?

$$+5 \quad +5$$

1. 
 2. 
 3. 
 4. 

$$2x < 8$$

$$\frac{2x}{2} < \frac{8}{2}$$

$$x < 4$$

16) A soda container holds $5\frac{1}{2}$ gallons of soda. How many ounces of soda does this container hold?

1. 44 3. 176
 2. 640 4. 704

1 quart = 32 ounces
1 gallon = 4 quarts

5.5 gallons $\left(\frac{4 \text{ Quarts}}{1 \text{ gallon}}\right) \left(\frac{32 \text{ ounces}}{1 \text{ Quart}}\right)$
704 Ounces

17) Which of the following values of x satisfies $\frac{2}{3}x + 5 = 19$?

$$\frac{2}{3}x + 5 = 19$$

$$-5 \quad -5$$

1. $x = 16$ 3. $x = 36$
 2. $x = 21$ 4. $x = \frac{28}{3}$

$$\left(\frac{3}{2}\right) \frac{2}{3}x = 14 \left(\frac{3}{2}\right)$$

$$x = 21$$

20) Solve & graph for x :

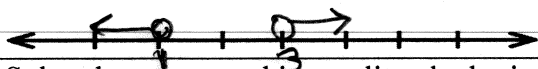
$$4 < -2x + 6 < 12$$

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

$$-2 < -2x < 6$$

$$\div -2 \quad \div -2 \quad \div -2$$

$$1 > x > 3$$



21) Solve the compound inequality algebraically and graph the solution set on the number line.

$$5(x+7) < 15 \quad \text{or} \quad 7-2x < x-8$$

$$5x+35 < 15$$

$$-35 \quad -35$$

$$\frac{5x}{5} < \frac{-20}{5}$$

$$x < -4$$

$$x < -4$$

$$+2x \quad +2x$$

$$7 < 3x - 8$$

$$+8 \quad +8$$

$$\frac{15}{3} < \frac{3x}{3}$$

$$5 < x$$

$$5 < x$$

