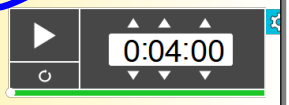
1. What is the equation of a line that is parallel to $2y = 8x - 5$ and goes through point (-2, 6)?



2. EOC: The legs of an isosceles right triangle are 5 inches long, what is the length of the hypotenuse?

A) $2\sqrt{5}$ B) $5\sqrt{2}$ C) $5\sqrt{10}$ D) $10\sqrt{5}$

$5^2 + 5^2 = x^2$

$25 + 25 = x^2$

$\sqrt{50} = \sqrt{x^2}$

$5\sqrt{2}$

50

5 10

5 2

pg. 1

Name: Key

Math 1 EOC Review

1. Write using positive exponents

a) $(8x^{-4}y^3)\left(\frac{4x^{10}y^{-12}}{-2x^5y^{-6}}\right)^2$ $32x^6y^{-9}$ $\frac{32x^6}{y^9}$

b) $\frac{27m^6p^{-6}q^3}{9m^{-3}q^3}$ $3m^9p^{-6}$ $\frac{3m^9}{p^6}$

2. Simplify $\sqrt{25m^{14}p^2t^4}$ $5m^7pt^2$

3. The height (in feet) of a balloon filled with helium can be expressed by h(s) = 5+6.3s where s is the number of seconds since the balloon was released. Identify and interpret the constants and coefficients of the equation. 5: initial height of balloon (constant)
6.3: # ft balloon rises per second (coefficient)

4. The equation $h(t) = -4.9t^2 + 17t + 0.6$ describes the height in meters of a basketball t seconds after it has been thrown vertically into the air. Interpret the constant in the context of this situation.
0.6 - starting height of basketball

5. The equation $C(t)= 35000(0.87)^t$ describes the cost of a new car t years after it has been purchased. Interpret the terms and coefficients of the expression in the context of this situation.

35,000 initial cost of car
.87 percent of value remaining of car
13% decrease in value each year

6. A rectangle has a length that is 2 units longer than the width. If the width is increased by 4 units and the length increased by 3 units, write two equivalent expressions for the area of the rectangle.

w+4
w+2+3

$A=(w+4)(w+5)$
$A=w^2+9w+20$

7. The expression $10{,}000(1.055)^n$ is the amount of money in an investment account with interest compounded annually for n years. Determine the initial investment and the annual interest rate.

10,000 initial investment
5.5% interest rate

8. The expression $-4x^2 + 8x + 12$ represents the height of a coconut thrown from a person in a tree to a basket on the ground where x is the number of seconds.

a) Factor the expression. $-4(x^2-2x-3)$
$-4(x-3)(x+1)$

b) Identify the zeroes and intercepts of the expression and interpret what they mean in regard to the context.
(0,12) y-int the height coconut is thrown at
(3,0), (-1,0) x-int or zeros; positive answer of 3 is number of seconds it takes to hit the ground

c) How long is the ball in the air?
3 seconds

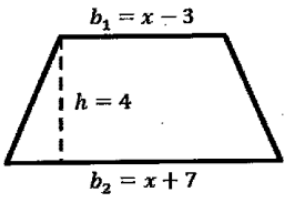
9. A vacant rectangular lot is being turned into a community vegetable garden with a uniform path around it. The area of the lot is represented by $4x^2 + 40x - 44$ where x is the width of the path in meters. Find the width of the path surrounding the garden.

$4(x^2+10x-11)$
$4(x+11)(x-1)$
$x=-11 \quad x=1$

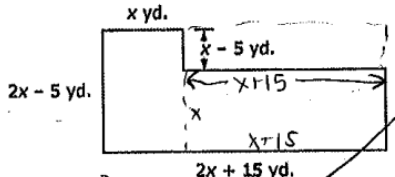
1 m

10. Find the area of the trapezoid using the formula $A = \frac{1}{2}h(b_1 + b_2)$

$A=\frac{1}{2}(4)(x-3+x+7)$
$2(2x+4)$
$4x+8$



11. A town council plans to build a public parking lot. The outline below represents the proposed shape of the parking lot.



$x(2x-5)+x(x+15)$
$2x^2-5x+x^2+15x$
$3x^2+10x$

a) Write an expression for the area, in square feet, of this proposed parking lot. $[(2x-5)(2x+15)]-[(x-5)(x+15)]$
OR $4x^2+20x-75-(x^2+10x-75)$

$3x^2+10x$

b) The town council has plans to double the area of the parking lot in a few years. Find the area of the new parking lot.

$2(3x^2+10x) = 6x^2+20x$

12. Given the function $y = 2x^2 + 6x - 3$, list the zeroes of the function

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can't factor $\frac{-6 \pm \sqrt{36 - 4(2)(-3)}}{4}$ $\frac{-6 \pm \sqrt{60}}{4}$ ≈ 0.44 ≈ -3.44

13. Find the solutions to the equation $x^2 - 13x = 30$.

$x^2 - 13x - 30$ $\frac{+13 \pm \sqrt{169 - 4(-30)}}{2}$ $\frac{13 \pm 17}{2}$

$(x-15)(x+2)$

$x = 15, \ x = -2$

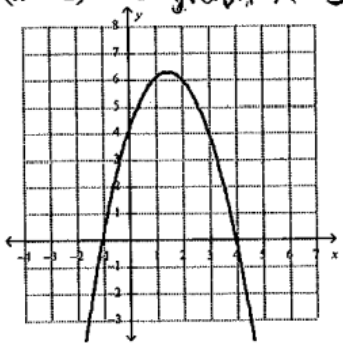
14. Which of the following has the largest x-intercept?

A) $x^2 + 4x - 12$ $(x+6)(x-2)$ $x = -6 \ \ x = 2$

B) $(x+2)(x-5)$ $x = -2 \ \ x = 5$

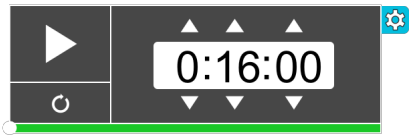
C) $(x-1)^2 - 4$ graph $x = 3$

D)



$x = 4$

Complete 5 questions of calculator active EOC on Canvas



21 Which equation represents the line that is perpendicular to the graph of $4x + 3y = 9$ and passes through $(-2, 3)$?

A $3x - 4y = -18$

B $3x + 4y = 18$

C $3x - 4y = -6$

D $3x + 4y = 6$

$m = \frac{3}{4}$ $3(-2) - 4(3)$ $-6 - 12$ $-3x$ -4 $-3x$ -4 $-3x$ -4 $\frac{3x}{4}$

$4x + 3y = 9$ $-4x$ $-4x$ $3y = -4x + 9$ $\frac{3}{3}$ $\frac{3}{3}$ $y = \frac{-4}{3}x + 3$

$\frac{3}{4}$

22 A club began with 3 members. Each month, each member brought one new member. Which function can be used to determine the number of members x months after the club began?

A $f(x) = 2x + 3$

B $f(x) = 3x + 1$

C $f(x) = 1.5(2)^x$

D $f(x) = 3(2)^x$

0 1 2 3

3, 6, 12, 24

$1.5(2)^1 = 3$ $3(2^1) = 6$ $1.5(2)^2$ $1.5(4) = 6$ $3(2)^x$ 0 x

23 Every ten years, the Census counts how many people are living in every town in the United States.

- The 2010 Census showed that 1,000 people were living in Appleville, and 4,000 people were living in Bridgetown.
- The population of Appleville is predicted to double every ten years.
- The population of Bridgetown is predicted to increase by 1,000 every ten years.

If the predictions come true, what will be the first census year that will show Appleville with a larger population than Bridgetown?

	A	B
2010	1000	4000
2020	2000	5000
2030	4000	6000
2040	8000	7000
50	16000	

24 Two stores have movies to rent.

- The first store charges a $12.50 per month membership fee plus $1.50 per movie rented.
- The second store has no membership fee but charges $3.50 per movie rented.

What is the minimum number of movies a person would need to rent in a month for the first store to be a better deal?

x

$12.50 + 1.50x < 3.5x$

$-1.5x \quad -1.5x$

$12.50 < 2x$

$\frac{12.50}{2} < \frac{2x}{2}$

$6.25 < x$

$x > 6.25$

7

25 Karen has two dogs. The larger dog weighs 1.4 pounds more than the smaller dog. The combined weight of the two dogs is 12.6 pounds. What is the weight, in pounds, of the smaller dog?

x

$x + 1.4$

$2x + 1.4 = 12.6$

$-1.4 \quad -1.4$

$\frac{2x}{2} = \frac{11.2}{2}$

5.6

Complete pg.2 of EOC Review.

Work hard. Refer to notes as needed.