HW 5/8

June 2017

35. Given: $g(x) = 2x^2 + 3x + 10$
$k(x) = 2x + 16$

Solve the equation $g(x) = 2k(x)$ algebraically for x, to the *nearest tenth*.

$2x^2+3x+10 = 2(2x+16)$

$2x^2+3x+10 = 4x+32$

$-4x-32 \quad -4x-32$

$2x^2-x-22=0$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$a = 2$
$b = -1$
$c = -22$

Explain why you chose the method you used to solve this quadratic equation.

$x = \frac{-(-1) \pm \sqrt{(-1)^2-4(2)(-22)}}{2(2)}$

$x = \frac{+1 \pm \sqrt{177}}{4} = \begin{cases} -3.1 \\ 3.6 \end{cases}$

The method I chose is the quadratic formula b/c the roots are irrational roots.

36. Michael has \$10 in his savings account. Option 1 will add \$100 to his account each week. Option 2 will double the amount in his account at the end of each week.

Write a function in terms of x to model each option of saving.

$f(x) = 10 + 100x$

$g(x) = 10(2)^x$

Michael wants to have at least \$700 in his account at the end of 7 weeks to buy a mountain bike. Determine which option(s) will enable him to reach his goal. Justify your answer.

$f(x) = 10 + 100(7)$
$= \$710$

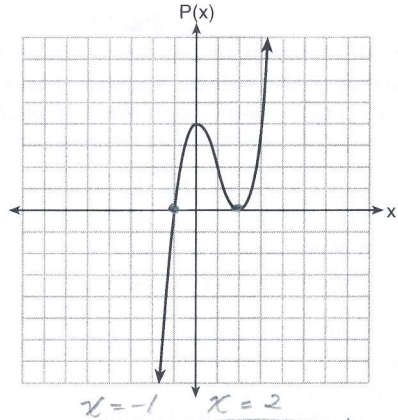
$g(x) = 10(2)^7$
$= \$1280$

both options will enable him to reach his goal.

HW 5/8

ALGEBRA 1
August 2017

7. Wenona sketched the polynomial $P(x)$ as shown on the accompanyig axes.



Which equation could represent $P(x)$?

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

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

7 1

8. Which situation does *not* describe a causal relationship?
(1) The higher the volume on a radio, the louder the sound will be.
(2) The faster a student types a research paper, the more pages the research paper will have.
(3) The shorter the time a car remains running, the less gasoline it will use.
(4) The slower the pace of a runner, the longer it will take the runner to finish the race.

8 2

9. A plumber has a set fee for a house call and charges by the hour for repairs. The total cost of her services can be modeled by $c(t) = 125t + 95$.
Which statements about this function are true?

I. A house call fee costs \$95.
II. The plumber charges \$125 per hour.
III. The number of hours the job takes is represented by t.

(1) I and II, only
(2) I and III, only
(3) II and III, only
(4) I, II, and III

9 4

10. What is the domain of the relation shown below?

$\{(4, 2),(1, 1),(0, 0),(1, -1),(4, -2)\}$

(1) $\{0, 1, 4\}$
(2) $\{-2, -1, 0, 1, 2\}$
(3) $\{-2, -1, 0, 1, 2, 4\}$
(4) $\{-2, -1, 0, 0, 1, 1, 1, 2, 4, 4\}$

10 1

11. What is the solution to the inequality $2 + \frac{4}{9}x \geq 4 + x$?

(1) $x \leq -\frac{18}{5}$ (2) $x \geq -\frac{18}{5}$ (3) $x \leq \frac{54}{5}$ (4) $x \geq \frac{54}{5}$

11 1

12. Konnor wants to burn 250 Calories while exercising for 45 minutes at the gym. On the treadmill, he can burn 6 Cal/min. On the stationary bike, he can burn 5 Cal/min. If t represents the number of minutes on the treadmill and b represents the number of minutes on the stationary bike, which expression represents the number of Calories that Konnor can burn on the stationary bike?
(1) b (2) $5b$ (3) $45 - b$ (4) $250 - 5b$

12 2

30. The formula $F_g = \frac{GM_1M_2}{r^2}$ calculates the gravitational force between two objects where G is the gravitational constant, M_1 is the mass of one object, M_2 is the mass of the other object, and r is the distance between them. Solve for the positive value of r in terms of F_g, G, M_1, and M_2.

in notebook p. 44

31. At Mountain Lakes High School, the mathematics and physics scores of nine students were compared as shown in the table below.

Mathematics	55	93	89	60	90	45	64	76	89
Physics	66	89	94	52	84	56	66	73	92

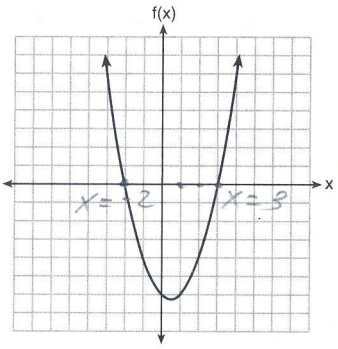
State the correlation coefficient, to the *nearest hundredth*, for the line of best fit for these data.

$y = 0.8x + 15.19$

$r = 0.92$

Explain what the correlation coefficient means with regard to the context of this situation. There is a high positive correlation between math & physics scores.

32. The graph of the function $f(x) = ax^2 + bx + c$ is given.



Could the factors of $f(x)$ be $(x + 2)$ and $(x - 3)$? Based on the graph, explain why or why *not*.

$x = -2 \quad x = 3$

$(x+2)(x-3) = 0$

yes because they are the factors of the zeros.

4/4

HW: green regents review 5/8
book pg. 9, 12, 28

30.) $r^2 \cdot F_g = \frac{GM_1M_2}{r^2} \cdot r^2$ solve for "r"

$\frac{r^2 \cdot F_g}{F_g} = \frac{GM_1M_2}{F_g}$

$\sqrt{r^2} = \sqrt{\frac{GM_1M_2}{F_g}}$

$r = \sqrt{\frac{GM_1M_2}{F_g}}$

p. 12

11) $\frac{4}{9}x + 4 \geq 4 + x$

$-2 \qquad -2$

$9\left[\frac{4}{9}x \geq 2 + x\right]$

$4x \geq 18 + 9x$

$-9x \qquad -9x$

$\frac{-5x}{-5} \geq \frac{18}{-5}$

Choice 1 $x \leq \frac{18}{-5}$