

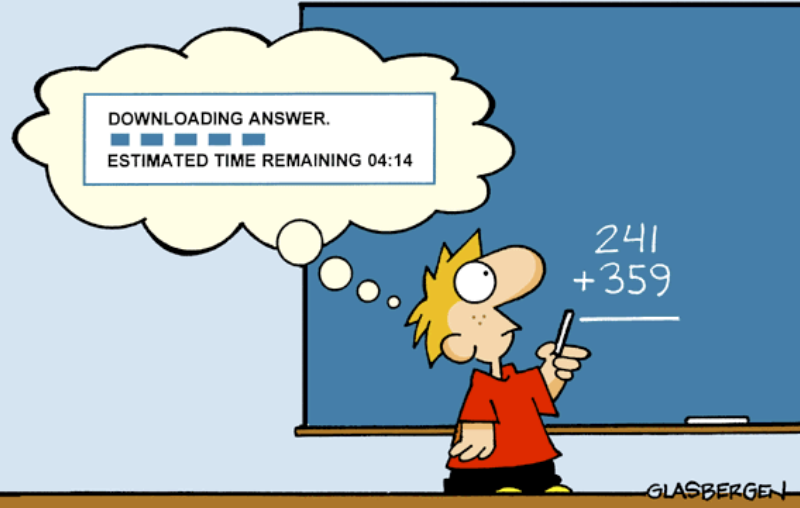
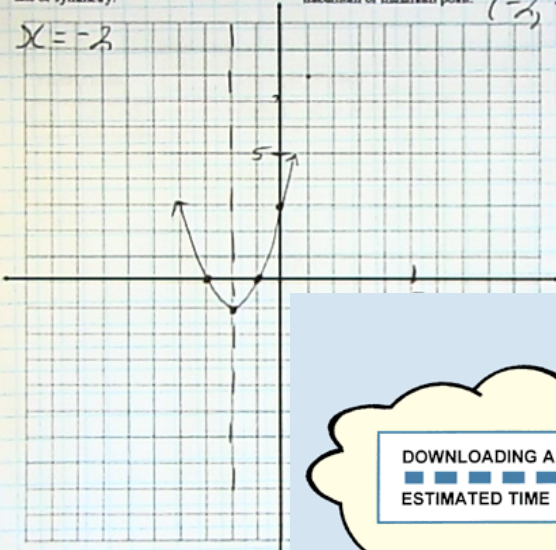


"NO, I WON'T TELL YOU WHO I COPIED MY MATH TEST FROM!"

Find the x and y intercepts, maximum or minimum, and the line of symmetry of the graph of $A = (x+1)(x+3)$ and explain how you found each. Write each point as an ordered pair.

x intercepts: $(-1, 0)$ & $(-3, 0)$ y intercept: $(0, 3)$

line of symmetry: $x = -2$ maximum or minimum point: $(-2, -1)$



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1. Find the key feature the graph of $y = (4x - 2)(x + 4)$. Show or explain how each is found. (worth 40 points)

y-intercept:

$$(0, -8)$$

line of symmetry:

$$x = -1.75$$

vertex: (10 points)

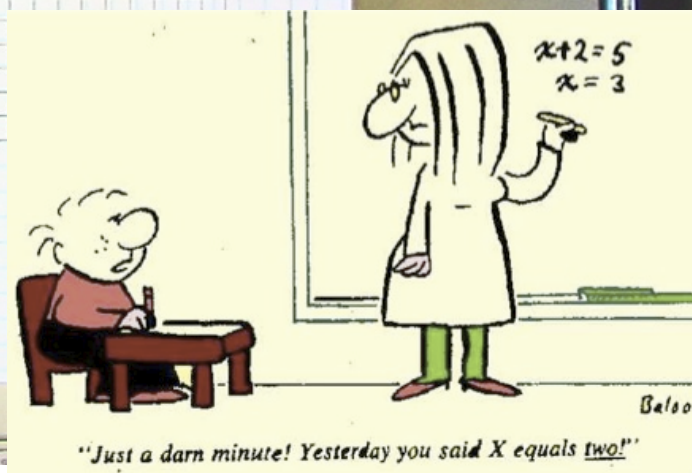
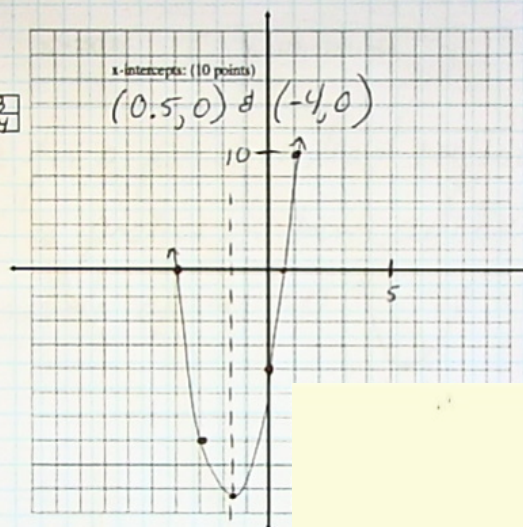
$$(-1.75, -20.25)$$

2 random points:

x	1	-3
y	10	-14

x-intercepts: (10 points)

$$(0.5, 0) \text{ and } (-4, 0)$$



Circle the two equations below that you are sure are quadratic and have a minimum point. Explain what you looked for in the equations.

$$y_1 = 35x^2 + 6x + 18$$

$$y_2 = -133x^2 + 23x - 2$$

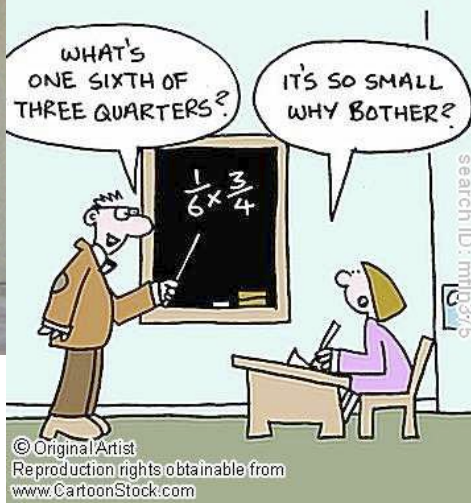
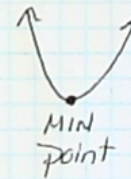
$$y_3 = 126 - 432x$$

$$y_4 = (4x + 2)(9 - 76x)$$

$$y_5 = 25(1.8)^x$$

$$y_6 = (25x + 2)(9 + 16x)$$

Look for a positive lead coefficient,
when 'a' is positive in form $ax^2 + bx + c$
then parabola opens up



Write the expression in factored form.

a.) $3x^2 + 7x + 2$

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

b.) $y^2 + 4y$

$y(y+4)$

c.) $2a^2 + 5a + 3$

$(2a+3)(a+1)$

d.) $3c^2 + 2c - 1$

$(3c-1)(c+1)$

e.) $9d^2 - 100$

$(3d+10)(3d-10)$

f.) $6g^2 - 19g - 7$

$(3g+1)(2g-7)$



Which of these six expressions represent a quadratic relationship? Circle your choice(s). Explain how you know.

$2x(3) - 15(x+2)$

$x^2 + 5$

$x(79x+4)$

$79x^2 + 4x$

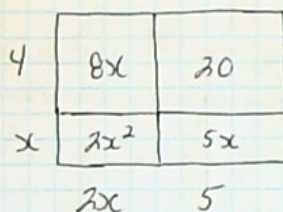
$x + x + 65$

2^x

$18x^2 + 5x$

Highest degree is 2 when in expanded form

Draw a rectangle divided to show that its area is represented by the expression $(2x+5)(x+4)$. Label the lengths and areas on your drawing.



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FFPC Algebra 8r Test Practice

March 05, 2012

$$h = -16t(t-4)$$

$$\begin{array}{l} -16t = 0 \quad t-4 = 0 \\ t = 0 \quad t = 4 \end{array} \quad \begin{array}{l} \text{so L.O.S.} \\ x = 2 \end{array}$$

x-intercepts

1. A signal flare is fired into the air from a boat. The height h of the flare in feet after t seconds is $h = -16t^2 + 64t = -16t(t-4)$

a. How high will the flare travel? When will it reach this maximum height? (10 points)

$$h = -16(2)^2 + 64(2) = 64$$

Flare will travel up to 64 feet in 2 seconds



b. When will the flare hit the water? Explain how you know. (10 points)

It will hit the water after 4 seconds.
This is when the height is 0, also the 2nd x-int

c. Explain how you could use a table and a graph to answer the questions in parts (a) and (b).

In a table you could look for the highest dependent variable value, y-value for max & then the zero value for when it hits water. In a graph look for max point & 2nd x-int



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For this problem, use the equation $y = 3x^2 + 2x - 1$.

a. Copy and complete this table:

x	0	1	2	3	4
y	-1	4	15	32	55

1st diff: 5, 11, 17, 23
 2nd diff: 6, 6, 6

b. What are the first differences in your table for the y values as x increases by 1?

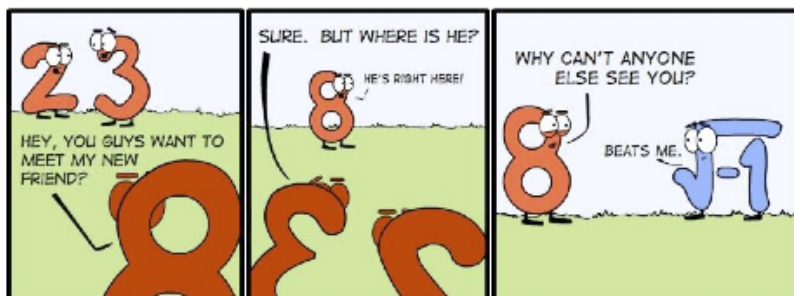
5, 11, 17, 23

c. What are the second differences in your table for the y values as x increases by 1?

6, 6, 6

d. Describe any patterns in the values you found in part (c) for the second differences.

They are all the same, thus this relationship is quadratic



One of the equations below represents the height, h , in feet of a thrown baseball as it changes over time, t , in seconds. The ball starts about shoulder height, rises to a maximum, and then falls to the ground.

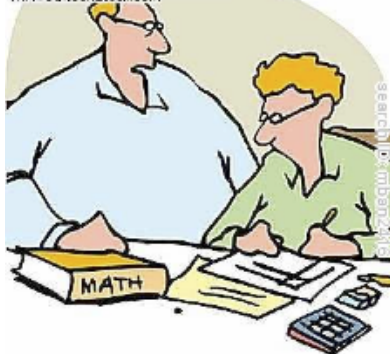
- $h = 16t^2 + 40t + 4$ $h = -16t^2 + 40t + 4$ $h = 16t$ $h = 16t^2 + 4$
 a. Which of these equations is a reasonable model for the given situation? Explain your choice.
 b. How is "shoulder height" represented in the correct equation?
 c. What maximum height will the ball reach? Explain how you found your solution.

a.) $h = -16t^2 + 40t + 4$ because it is the only one with a max height

b.) The shoulder height is represented by the $+4$ in the equation

c.) max height can be found using
 $x = \frac{-b}{2a} = \frac{-40}{2(-16)} = 1.25$ to find line of symmetry the $h = -16(1.25)^2 + 40(1.25) + 4$
 $= 29$ feet

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"4x4? That's an easy one: truck."

A signal flare is fired into the air from a boat. The height of the flare in feet after t seconds is $h = -16t^2 + 160t$.

- a. How high will the flare travel? When will it reach this height?
b. When will the flare hit the water?

$$h = -16t(t - 10)$$

/ x-int \

$$-16t = 0$$

$$t = 0$$

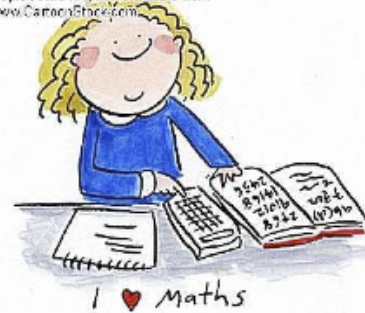
$$t - 10 = 0$$

$$t = 10$$

line of symmetry $x = 5$

- a.) Flare will travel $h = -16(5)^2 + 160(5)$
 $= 400$ feet after
5 seconds
- b.) It will hit water
after 10 seconds

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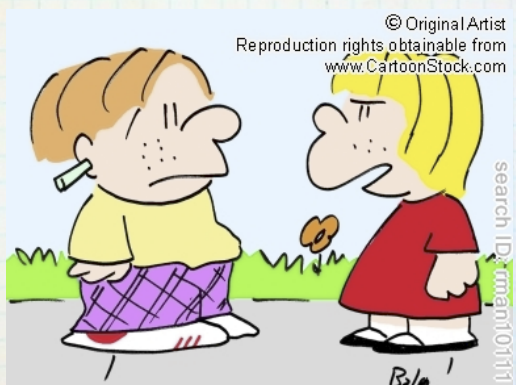


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Which table could represent a quadratic relationship?

F.	x	y	G.	x	y	H.	x	y	J.	x	y
	-3	-3		-3	1		1	0		-1	10
	-2	-2		-2	2		2	2		0	7
	-1	-1		-1	3		3	6		1	4
	0	0		0	4		4	12		2	1
	1	1		1	3		5	20		3	4
	2	2		2	2		6	30		4	7
	3	3		3	1		7	42		5	10

Handwritten notes next to tables: F. NO, G. NO, H. Yes, J. NO



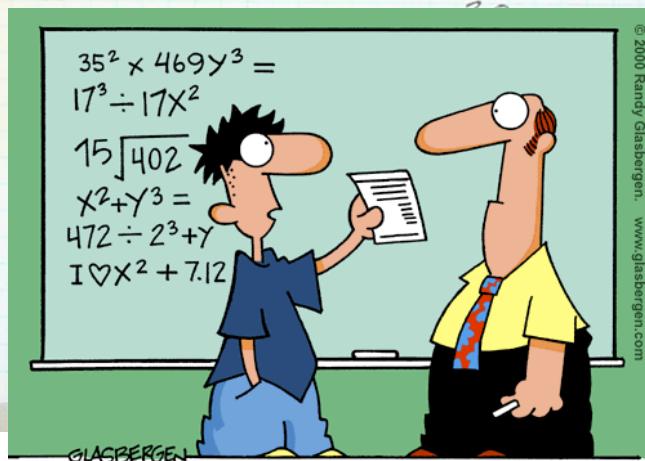
"You have to *study* for tests, dummy — you can't just put a memory stick in your ear!"

This prism is made from centimeter cubes. After the prism was built, its faces were painted.



How many centimeter cubes have

- a. no painted faces? 0 b. one painted face? 6
c. two painted faces? 16 d. three painted faces? 8
e. How many centimeter cubes are there in all?



"I HAD MY DOCTOR DO A D.N.A. BLOOD ANALYSIS.
AS I SUSPECTED, I'M MISSING THE MATH GENE."

