

Key

**CLASSWORK:** ① incognito

a. If  $k = am + 3mx$ , the value of  $m$  in terms of  $a$ ,  $k$ , and  $x$  can be expressed as

$$k = am + 3mx$$

(1)  $\frac{k}{a + 3x}$

(3)  $\frac{k - am}{3x} \quad \frac{k}{a + 3x} = \frac{m(a + 3x)}{a + 3x}$

(2)  $\frac{k - 3mx}{a}$

(4)  $\frac{k - a}{3x}$

b. The formula for the volume of a right circular cylinder is  $V = \pi r^2 h$ . The value of  $h$  can be expressed as

$$V = \pi r^2 h$$

(1)  $\frac{V}{\pi r^2}$

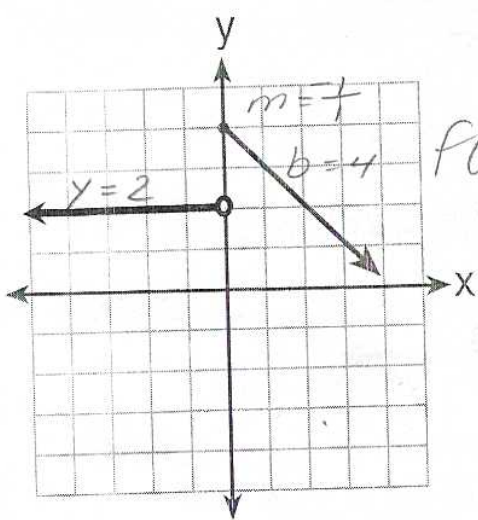
(3)  $\frac{\pi r^2}{V}$

(2)  $\frac{V}{\pi r^2}$

(4)  $V - \pi r^2$

**Tying the Pieces together** ②

Write the piecewise function for the graph below. Show how you arrived at the answer.



$$f(x) = \begin{cases} 2, & x < 0 \\ -x + 4, & x \geq 0 \end{cases}$$

Name: \_\_\_\_\_  
Alg. II - Period: \_\_\_\_\_

April 2  
Glue on page 97

## Functions ③

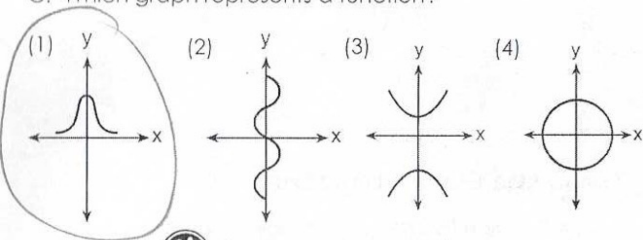
A. Which set is a function?

- (1)  $\{(3, 4), (3, 5), (3, 6), (3, 7)\}$   
 (2)  $\{(1, 2), (3, 4), (4, 3), (2, 1)\}$   
 (3)  $\{(6, 7), (7, 8), (8, 9), (6, 5)\}$   
 (4)  $\{(0, 2), (3, 4), (0, 8), (5, 6)\}$

B. Given the function,  $f(n) = (n-1)^2 + 3n$ , find  $f(3)$ .

$$\begin{aligned} f(3) &= (3-1)^2 + 3(3) \\ &= 2^2 + 9 \\ &= 13 \end{aligned}$$

C. Which graph represents a function?



## ④ interval notation

A. Which set of integers is included in  $[-1, 3]$ ?

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

B. Graph the solution set on the number line.



C. Is -1 included in the solution. Explain. No because

the ( means that -1 is  
not part of the solution

Show work on pages 98 & 99

## ⑤ mix it up

Alexa's teacher gave the class the quadratic function  $f(x) = 3x^2 + 6x + 1$ . Solve the equation  $f(x) = 0$ . Solve by completing the square. Round your answer to the nearest tenth.

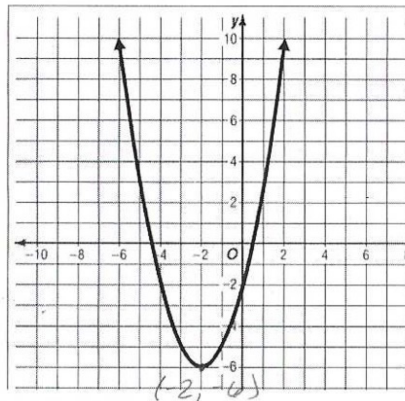
## ⑥ making connections

A.) Write the equation of the function shown in the graph in vertex form and standard form.

B.) Using the equation found in part A, find the zeros.

C.) State the domain and range of the function shown in the graph below.

domain;  
 all real #'s  
 range:  $y \geq -4$



## ⑦ what's the meaning

A model rocket is launched into the air from ground level. The height, in feet, is modeled by  $p(x) = -16x^2 + 32x$ , where  $x$  is the number of elapsed seconds. What is the total number of seconds the model rocket will be in the air?

State the coordinates of the vertex and explain its meaning in the context of the problem.

Classwork

5)  $0 = 3x^2 + 6x + 1$

vertex  $(-1, -2)$  h, k

$0 = 3(x+1)^2 - 2$

$\frac{2}{3} = \frac{3(x+1)^2}{3}$

rationalize  
 $\frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6}}{3}$

$\sqrt{\frac{2}{3}} = \sqrt{(x+1)^2}$

$\pm \sqrt{\frac{2}{3}} = x + 1$   
 $-1 \quad -1$

$x = -1 \pm \frac{\sqrt{6}}{3}$  exact

$-1 \pm \sqrt{\frac{2}{3}} = x$

round  
 $-0.2 \quad -1.8$

6)  $f(x) = (x+2)^2 - 6$  vertex form

$f(x) = (x+2)(x+2) - 6$

$f(x) = x^2 + 4x + 4 - 6$

$f(x) = x^2 + 4x - 2$  Standard form

$0 = (x+2)^2 - 6$

$\frac{6}{6} \quad \frac{6}{6}$   
 $\sqrt{6} = \sqrt{(x+2)^2}$

$\sqrt{6} = x + 2$

zeros  
 $-2 \quad -2$   
 $-2 \pm \sqrt{6} = x$

7)  $p(x) = -16x^2 + 32x$

2 secs in the air

vertex  $(1, 16)$   
sec ft

The rocket will be at 16-ft high in 1 sec.