

# Algebra

## Common Interim Assessment #3

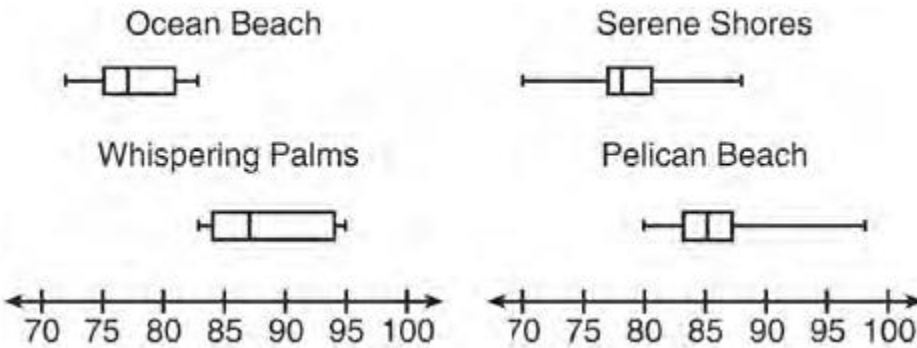
2015-2016

Name: \_\_\_\_\_

School: \_\_\_\_\_

Teacher: \_\_\_\_\_

- 1) Corrine is planning a beach vacation in July and is analyzing the daily temperatures for her potential destination. She would like to choose a destination with a high median temperature and a small interquartile range. She constructed box plots shown in the diagram below.



Which destination has a median temperature above 80- degrees and the smallest interquartile range?

- Ocean Beach
- Whispering Palms
- Serene Shores
- Pelican Beach

- 2) The table below shows the average diameter of a pupil in a person's eye as he or she grows older.

Age (years)	Average Pupil Diameter (mm)
20	4.7
30	4.3
40	3.9
50	3.5
60	3.1
70	2.7
80	2.3

What is the average rate of change, in millimeters per year, of a person's pupil from age 20 to age 80?

- 2.4
- 0.04
- 2.4

d. -0.04

3) What is the value of  $x$  in the equation  $\frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$ ?

- a. 4
- b. 6
- c. 8
- d. 11

4) The value of the  $x$ -intercept for the graph of  $4x - 5y = 40$  is

- a. 10
- b. -8
- c.  $\frac{4}{5}$
- d.  $-\frac{4}{5}$

5) A satellite television company charges a one-time installation fee and a monthly service charge. The total cost is modeled by the function  $y = 40 + 90x$ . Which statement represents the meaning of each part of the function?

- a.  $y$  is the total cost,  $x$  is the number of months of service, \$90 is the installation fee, and \$40 is the service charge per month.
- b.  $y$  is the total cost,  $x$  is the number of months of service, \$40 is the installation fee, and \$90 is the service charge per month.
- c.  $x$  is the total cost,  $y$  is the number of months of service, \$40 is the installation fee, and \$90 is the service charge per month.
- d.  $x$  is the total cost,  $y$  is the number of months of service, \$90 is the installation fee, and \$40 is the service charge per month.

6) Keith determines the zeros of the function  $f(x)$  to be -6 and 5. What could be Keith's function?

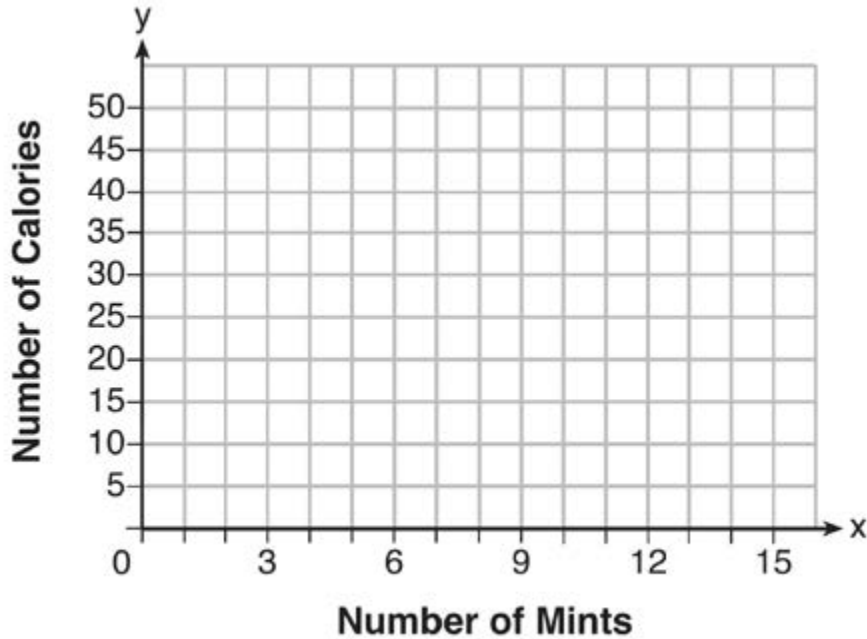
- a.  $f(x) = (x+5)(x+6)$
- b.  $f(x) = (x+5)(x-6)$
- c.  $f(x) = (x-5)(x+6)$
- d.  $f(x) = (x-5)(x-6)$

7) Which equation has the same solution as  $x^2 + 6x - 7 = 0$ ?

- a.  $(x+3)^2 = 2$
- b.  $(x-3)^2 = 2$
- c.  $(x-3)^2 = 16$

d.  $(x+3)^2 = 16$

- 8) Max purchased a box of green tea mints. The nutrition label on the box stated that a serving of three mints contains a total of 10 Calories. On the axes below, graph the function,  $C$ , where  $C(x)$  represents the number of Calories in  $x$  mints.



Part b: Write an equation that represents  $C(x)$ .

Part c: A full box of mints contains 180 Calories. Use the equation to determine the total number of mints in the box.

- 9) Solve the equation  $4x^2 - 12x = 7$  algebraically for  $x$ .

10) Express the product of  $2x^2 + 7x - 10$  and  $x + 5$  in standard form

11) A company is considering building a manufacturing plant. They determine the weekly production cost at site  $A$  to be  $A(x)3x^2$  while the production cost at site  $B$  is \_\_\_\_\_, where  $x$  represents the number of products, in hundreds, and  $A(x)$  and  $B(x)$  are the production costs, in hundreds of dollars. Graph the production cost functions on the set of axes below and label them site  $A$  and site  $B$ .

