Quiz Rev: Chapter 4 (4.1-4.5)

Name:
Period:

1. The height of water in a bathtub, w, is a function of time, t. Let P represent this function. Height is measured in inches and time in minutes.

   Match each statement in function notation with a description.

   A. $P(0) = 0$ 2

   B. $P(4) = 10$ 4

   C. $P(10) = 4$ 3

   D. $P(20) = 0$ 1

   ~~1.~~ After 20 minutes, the bathtub is empty.

   ~~2.~~ The bathtub starts out with no water.

   ~~3.~~ After 10 minutes, the height of the water is 4 inches.

   ~~4.~~ The height of the water is 10 inches after 4 minutes.

2. Function C takes time for its input and gives a student's Monday class for its output.

   a. Use function notation to represent: A student has English at 10:00.

   C(10:00) = English

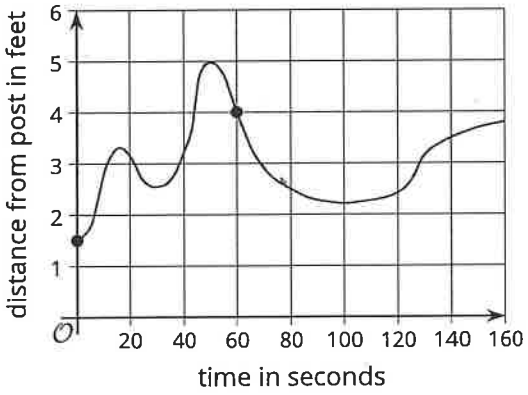
   b. Write a statement to describe the meaning of $C(11:15) = \text{chemistry}$.

   A student has Chemistry at 11:15

3. Function f gives the distance of a dog from a post, in feet, as a function of time, in seconds, since its owner left.

   Find the value of $f(20)$ and of $f(140)$.

   3.2 (around) 3.4 (around)

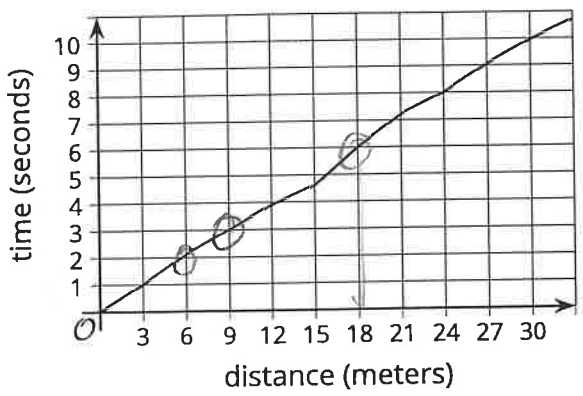


4. Function C gives the cost, in dollars, of buying n apples. What does each expression or equation represent in this situation?

   a. $C(5) = 4.50$ If you buy 5 apples it cost $4.50

   b. $C(2)$ The cost of 2 apples

5. The graph shows the time, t, it took a runner to run different distances, d.



a. How long did it take the runner to run 9 meters?

3 seconds

b. How far did the runner go in 6 seconds?

18 meters

c. What does the point (24, 8) on the graph mean in this situation?

It took the runner 8 seconds to run 24 meters

7. Match each equation with a description of the function it represents.

A. $f(x) = 2x + 4$ 3

B. $g(x) = 2(x + 4)$ 1

C. $h(x) = 4x + 2$ 4

D. $k(x) = 4(x + 2)$ 2

1. To get the output, add 4 to the input, then multiply the result by 2.
2. To get the output, add 2 to the input, then multiply the result by 4.
3. To get the output, multiply the input by 2, then add 4 to the result.
4. To get the output, multiply the input by 4, then add 2 to the result.

8. Function C gives the cost, in dollars, of buying n apples.

Which statement best represents the meaning of $C(10) = 9$?

↑ ↑
n
apples cost

A. The cost of buying 9 apples

B. The cost of 9 apples is $10.

C. The cost of 10 apples

D. Ten apples cost $9.

9. An equilateral triangle has three sides of equal length. Function P gives the perimeter of an equilateral triangle of side length s.

a. Find $P(2)$ 6

b. Find $P(10)$ 30

c. Find $P(s)$ 3s

10 Functions f and A are defined by these equations.

$$f(x) = 80 - 15x \qquad A(x) = 25 + 10x$$

Which function has a greater value when x is 2.5?

$f(2.5) = 42.5$ $A(2.5) = 50$

11. The cell phone plan from Company C costs \$10 per month, plus \$15 per gigabyte for data used. The plan from Company D costs \$80 per month, with unlimited data.

Rule C gives the monthly cost, in dollars, of using g gigabytes of data on Company C's plan. Rule D gives the monthly cost, in dollars, of using g gigabytes of data on Company D's plan.

a. Write a sentence describing the meaning of the statement $C(2) = 40$.

It costs \$40 to use 2 gigabytes

b. Which is less, $C(4)$ or $D(4)$? What does this mean for the two phone plans?

$C(4) = 70$

$D(4) = 80$

$C(g) = 10 + 15g$

$D(g) = 80$

c. Which is less, $C(5)$ or $D(5)$? Explain how you know.

$C(5) = 85$

$D(5) = 80$

12 Function g is represented by the graph.

For what input value or values is $g(x) = 4$?

-2 and 2