Lesson 10 Practice Problems

1. The cost for an upcoming field trip is $30 per student. The cost of the field trip C, in dollars, is a function of the number of students x.

   Select **all** the possible outputs for the function defined by $C(x) = 30x$.

   A. 20

   B. 30

   C. 50

   D. 90

   E. 100

2. A rectangle has an area of 24 cm^2. Function f gives the length of the rectangle, in centimeters, when the width is w cm.

   Determine if each value, in centimeters, is a possible input of the function.

   3 0.5 48 -6 0

3. Select **all** the possible input-output pairs for the function $y = x^3$.

   A. $(-1, -1)$

   B. $(-2, 8)$

   C. $(3, 9)$

   D. $(\frac{1}{2}, \frac{1}{8})$

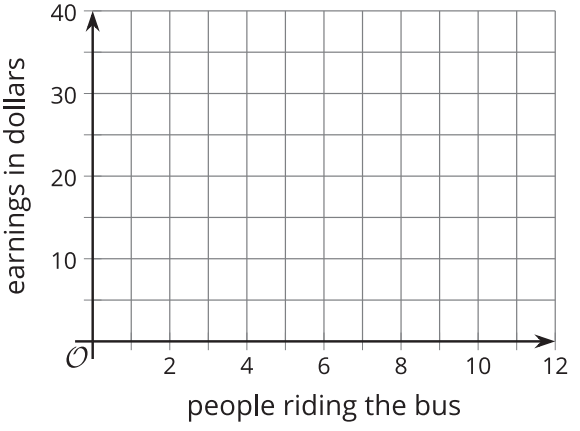
   E. $(4, 64)$

   F. $(1, -1)$

4. A small bus charges $3.50 per person for a ride from the train station to a concert. The bus will run if at least 3 people take it, and it cannot fit more than 10 people.

   Function B gives the amount of money that the bus operator earns when n people ride the bus.

   a. Identify all numbers that make sense as inputs and outputs for this function.



   b. Sketch a graph of B.

5. Two functions are defined by the equations $f(x) = 5 - 0.2x$ and $g(x) = 0.2(x + 5)$.

   Select **all** statements that are true about the functions.

   A. $f(3) > 0$

   B. $f(3) > 5$

   C. $g(\text{-}1) = 0.8$

   D. $g(\text{-}1) < f(\text{-}1)$

   E. $f(0) = g(0)$

(From Unit 4, Lesson 5.)

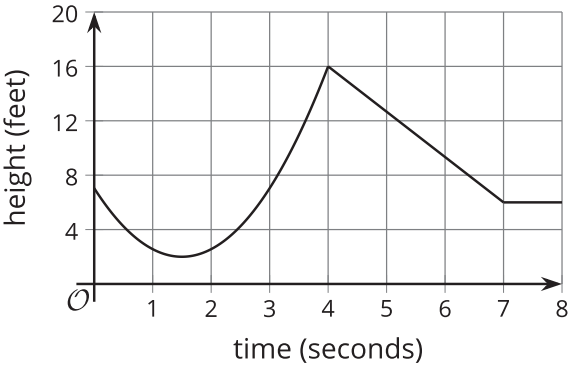
6. The graph of function f passes through the coordinate points $(0, 3)$ and $(4, 6)$.

   Use function notation to write the information each point gives us about function f.

(From Unit 4, Lesson 3.)

7. Match each feature of the graph with the corresponding coordinate point.

   If the feature does not exist, choose "none".

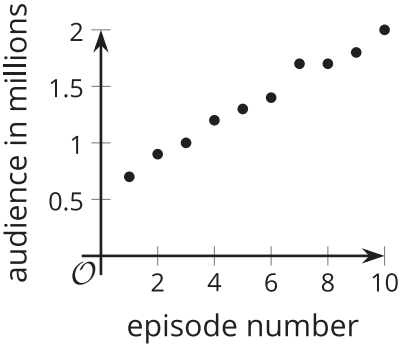


A. maximum	1. $(0, 7)$
B. minimum	2. $(1.5, 2)$
C. vertical intercept	3. $(4, 16)$
D. horizontal intercept	4. none

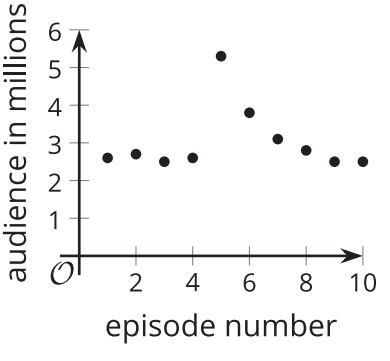
(From Unit 4, Lesson 6.)

8. The graphs show the audience, in millions, of two TV shows as a function of the episode number.

Show A



Show C



For each show, pick two episode numbers between which the function has a negative average rate of change, if possible. Estimate the average rate of change, or explain why it is not possible.

(From Unit 4, Lesson 9.)