Math 10

Lesson 3–2 Answers

**Lesson Questions**

**Question 1**

a) domain: {4, 6, 8, 9}

range: {2, 3}

The relation is not a function since the domain number 6 is associated with two number (2 and 3) in the range.

b) domain: {January, February, March, April}

range: {28, 30, 31}

The relation is a function since each domain element is associated with a range element.

**Question 2**

The table shows the costs of student bus tickets, *C* dollars, for different numbers of tickets, *n*.

a) The relation is a function since every *n* value has only one *C* value.

b) Since *C* depends on *n*, Independent variable is *n* and the dependent variable is *C*.

c) domain: {1, 2, 3, 4, 5, …}

 range: {1.75, 3.50, 5.25, 7.00, 8.75, …}

**Question 3**

a) 

b) c)

**Question 4**

a) 

b) c)

**Assignment**

1. a) Function b) Not a function c) Function

2. a) Function; domain: {1, 2, 3, 4}; range: {3, 6, 9, 12}

b) Not a function; domain: {–1, 0, 1}; range: {–1, 0, 1}

c) Function; domain: {2, 4, 6, 8}; range: {3, 5, 7, 9}

d) Not a function; domain: {0, 1, 2}; range: {1, 2, 3}

3. a) *C*(*n*) = 20*n* + 8

b) *P*(*n*) = *n* – 3

c) *t*(*d*) = 5*d*

d) *f*(*x*) = –*x*

4. a) *d* = 3*t* – 5

b) *y* = –6*x* + 4

c) *C* = 5*n*

d) *P* = 2*n* – 7

5. a) Function; domain: {1, 2, 3, 4}; range: {1, 8, 27, 64}

b) Not a function; domain: {3}; range: {4, 5, 6, 7}

6. a) i) Function

 ii) Dependent variable: *C*; independent variable: *n*

 iii) Domain: {1, 2, 3, 4, 5, 6, …}; range: {2.39, 4.00, 6.39, 8.00, 10.39, 12.00, …}

b) i) Function

 ii) Dependent variable: *T*; independent variable: *A*

 iii) Domain: {610, 1220, 1830, 2440, 3050, 3660, …}; range: {15.0, 11.1, 7.1, 3.1, –0.8,

 –4.8, …}

7. The statement in part a is true.

8. a) i) *n* = 9

ii) *n* = ½ or 0.5

b) i) *x* = –8

ii) *x* = 17/5 or 3.4

9. a) *C* = 2.54*i*

b) *C*(12) = 30.48

c) *i* = 39.3700…

10. a)

i) *f*(15) = 112.785; a female whose humerus is 15 cm long will be approximately 113 cm tall.

ii) *m*(20) = 128.521; a male whose humerus is 20 cm long will be approximately 129 cm tall.

b)

i) *l* = 25.6082…; a female who is 142 cm tall will have a humerus length of approx. 26 cm.

ii) *l* = 42.6257…; a male who is 194 cm tall will have a humerus length of approx. 43 cm.

11.

a)

i) *C*(50) = 10

ii) *C*(–13) = –25

b)

i) *f* = 68

ii) *f* = –31

c)

i) *C*(32) = 0

ii) *C*(212) = 100

iii) *C*(356) = 180

12. 

13. *t*(*s*) = 11 – 2*s*