Name: Solutions

/20

Math 10

QUIZ – Chapter 5 Part I

1. In the following situations, determine which of the variables is independent, and which one is dependent.

a) $p = 2\pi r$ p: dependent r: independent

b)

| $a$ | P |
|---|---|
| 1 | -4 |
| 2 | 0 |
| 3 | 2 |

P: dependent

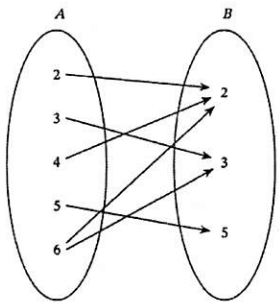
a: independent

4

c) The relation between the number of candies eaten and the number of corresponding calories.

number of calories: dependent
number of candies: independent

d)




B: dependent

A: independent

2. Let $f(x) = -2x + 3$

a) Determine $f(0)$ and $f(-5)$

$f(0) = -2(0) + 3$
$= 3$

$f(-5) = -2(-5) + 3$
$= 10 + 3$
$= 13$

b) Determine $x$ such that $f(x) = 0$

$-2x + 3 = 0$
$-2x = -3$
$\boxed{x = \frac{3}{2}}$

4

c) Determine $x$ such that $f(x) = -5$

$-2x + 3 = -5$
$-2x = -8$
$\boxed{x = 4}$

3. Determine the domain and range of the following relations:

a) Ordered pairs: {(1,5), (2, 10), (3, 10), (4, 15)}

D = {1, 2, 3, 4}
R = {5, 10, 15}

b) Number of fingers with rings on them that a student has ⟷ Number of students in a class of 25

D = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
R = {0, 1, 2, ..., 25}

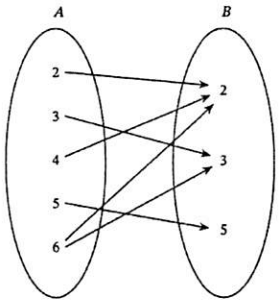
c)

| *a* | P |
|---|---|
| 1 | -4 |
| 2 | 0 |
| 3 | 2 |

D = {1, 2, 3}
R = {-4, 0, 2}

4

d)

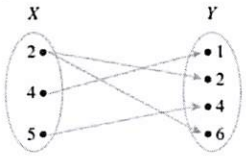



D = {2, 3, 4, 5, 6}
R = {2, 3, 5}

4. Determine if the following relations are functions:

a) {(1,5), (2, 10), (3, 10), (4, 15)} yes

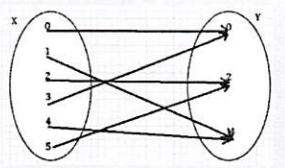
b)




no

c)

2




yes

d)

| Name of polygons | Number of sides |
|---|---|

yes

5. Judith works for a company that sells Tupperware. She gets paid \$50 when she organizes an event, and then she gets \$10 for each \$100 she sells at the event.
a) Write an equation to model her revenue (R in \$) for an event she organizes as a function of her sales there ($x$ in \$100 's).

$R = 50 + 10x$

b) Determine $R(5)$ and say what it represents in this story.

$R(5) = 50 + 10(5)$
$= 100$

She gets \$100 if she organizes an event and makes \$500 in sales there.

4

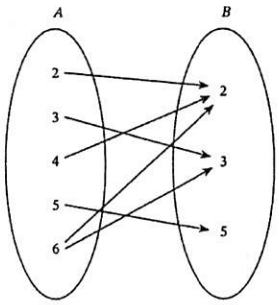
c) Solve $R(x) = 180$ and say what it represents in this story.

$180 = 50 + 10x$
$10x = 130$
$x = 13$

She needs to make \$1300 worth of sales to make \$180 at an event.

6. Rewrite these relations in ordered pairs:

a)




$\{(2,2); (3;3); (4,2); (5;5); (6,2); (6,3)\}$

2

b)

| $a$ | P |
|---|---|
| 1 | -4 |
| 2 | 0 |
| 3 | 2 |

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

[illegible]