Good Morning!!

Define the following:

Associative Property

Communitive Property

Distributive Property

Did you remember to get your texbooks covered?

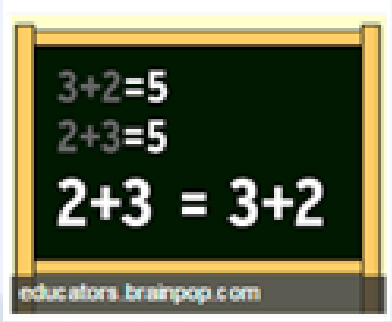
BINS IN THE BACK...

The associative property states that you can add or multiply regardless of how the numbers are grouped

$$2 + 7 + 5 = 2 + 7 + 5$$
$$(2 + 7) + 5 = 2 + (7 + 5)$$
$$(9) + 5 = 2 + (12)$$
$$14 = 14$$

© mathwarehouse.com

the Commutative Property is the one that refers to moving stuff around



The Distributive Property is an algebra property which is used to multiply a single term and two or more terms inside a set of parentheses.

$$5(x + 2) = 5 \cdot x + 5 \cdot 2$$

© mathwarehouse.com

$$(5x)(3x + 6) = 5x \cdot 3x + 5x \cdot 6$$

$$(5)(3x^2 + 2x + 6) = 5 \cdot 3x^2 + 5 \cdot 2x + 5 \cdot 6$$

Skills Check Answers

Skill 1 Properties of Real Numbers

Name the property that justifies each statement.

1. If $y = 2$, then $5y = 5(2)$.
2. $(3 + 4) + 5 = 3 + (4 + 5)$

1. substitution
2. associative

Skill 2 Fractions

Evaluate each expression.

3. $\frac{5}{16} + \frac{1}{8}$ $\frac{2}{16} = \frac{7}{16}$
4. $\frac{6}{14} - \frac{2}{21}$ $\frac{18}{42} - \frac{4}{42} = \frac{14}{42} = \frac{1}{3}$
5. $\frac{2}{7} \cdot \frac{5}{6} = \frac{10}{42}$
6. $\frac{5}{9} \div \frac{2}{3}$ $\frac{5}{9} \cdot \frac{3}{2} = \frac{15}{18} = \frac{5}{6}$

3. $\frac{7}{16}$
4. $\frac{1}{3}$
5. $\frac{10}{42}$ $\frac{5}{21}$
6. $\frac{5}{6}$

Skill 3 Order of Operations

Find the value of each expression.

7. $2 + 4 \cdot 3 - 5$

8. $4 - (3 + 5) \div 2$

9. $15 \div 2 \cdot 3^2 - 6 + 4$

$7.5 \cdot 9$

$67.5 - 6 + 4$

$61.5 + 4$

65.5

7. 9

8. -2

9. 65.5

Skill 4 Algebraic Expressions

10. Simplify $6r + 2rs - 5r - rs$.

11. Evaluate $x + y^2 - 4y$ if $x = 3$ and $y = -2$.

$3 + (-2)^2 - 4(-2)$

$3 + 4 + 8$

10. $1r + 1rs$

11. 15

Skill 5 Solving Equations and Inequalities

12. Solve $4x + 6 = -3$. ⟶

$4x + 6 = -3$

$-6 \quad -6$

$\frac{4x}{4} = \frac{-9}{4}$

$x = -2.25$

13. Solve $7 < 8 - 8y$.

$-3 \quad -3$

$\frac{4 < -8y}{-8 \quad -8}$

$-2 > y$

Skill 6 Polynomials

14. Find the degree of $7x^3 - xy$.

15. Arrange the terms of $7 - y^3 + y$ so that the powers of y are in descending order.

14. 3rd

15. $-y^3 + y + 7$

Skill 7 Operations with Polynomials

16. Find $(4m^2 + 5m - 1) + (6m^2 - 6m + 4)$.

17. Find $(5t + 3) - (3t + 4)$.

18. Find $(w + 5)(w - 2)$.

16. $10m^2 - m + 3$

17. $2t - 1$

18. $w^2 + 3w - 10$

Skill 8 Rationalizing a Denominator

Simplify.

19. $\frac{\sqrt{5}}{\sqrt{2}}$

20. $\sqrt{\frac{6}{8}}$

$\sqrt{\frac{6}{8}} = \sqrt{\frac{3}{4}}$

$= \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

21. $\frac{2}{1+\sqrt{2}} \cdot \frac{(1-\sqrt{2})}{(1-\sqrt{2})}$

$\frac{2-2\sqrt{2}}{1-2}$

$\frac{2-2\sqrt{2}}{-1}$

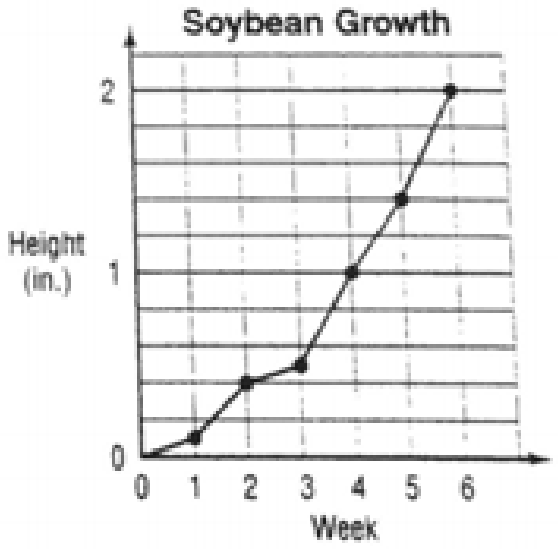
19. $\sqrt{10}/2$

20. $\sqrt{3}/2$

21. $-2+2\sqrt{2}$

Skill 9 Statistical Displays

22. The line graph at the right shows the height of a soybean plant recorded at the end of each week for 6 weeks. At the end of which week had the plant grown the most?



22. week 6

SECTIONS 2.1

FUNCTIONS ARE FUN!

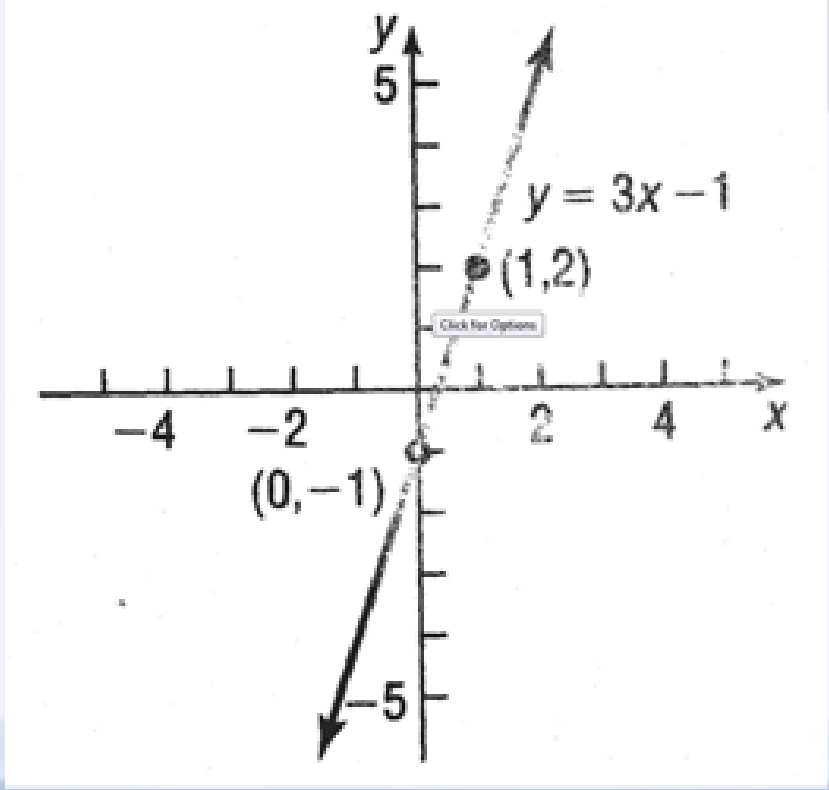
If you see an askerisk*, then I would recommend you write the information in your notes :)

OBJECTIVE 1

DETERMINE WHETHER A RELATION REPRESENTS A FUNCTION

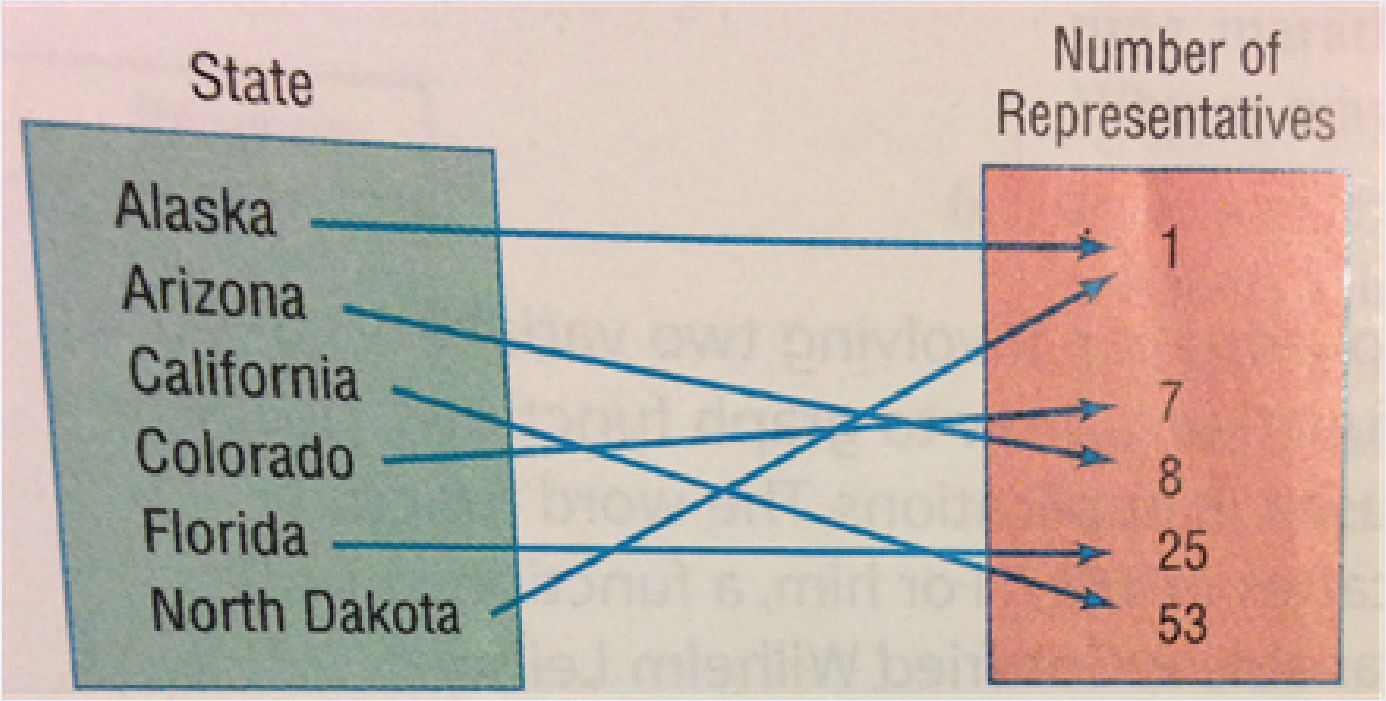
A *relation is a correspondence between two sets.

If x and y are two elements in these sets and if a relation exists between x and y, then we say that x corresponds to y or that y depends on x, and *we write x --> y.

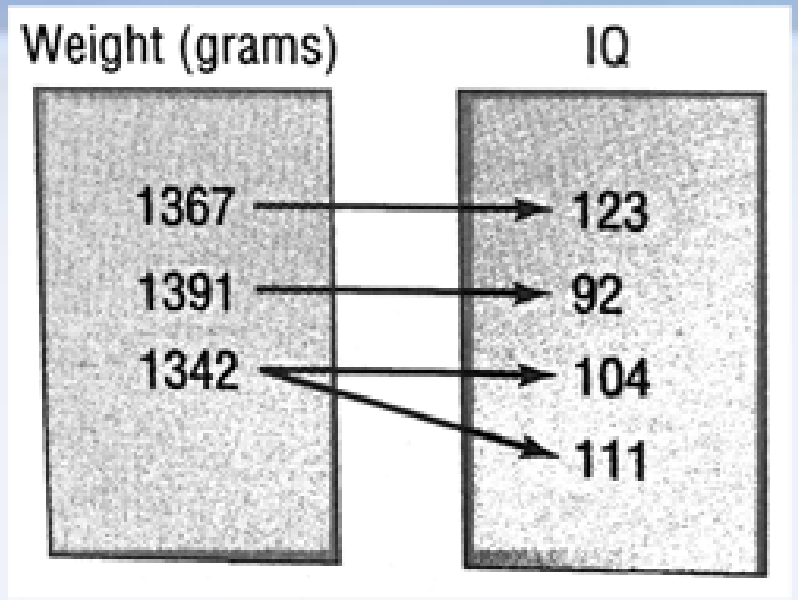


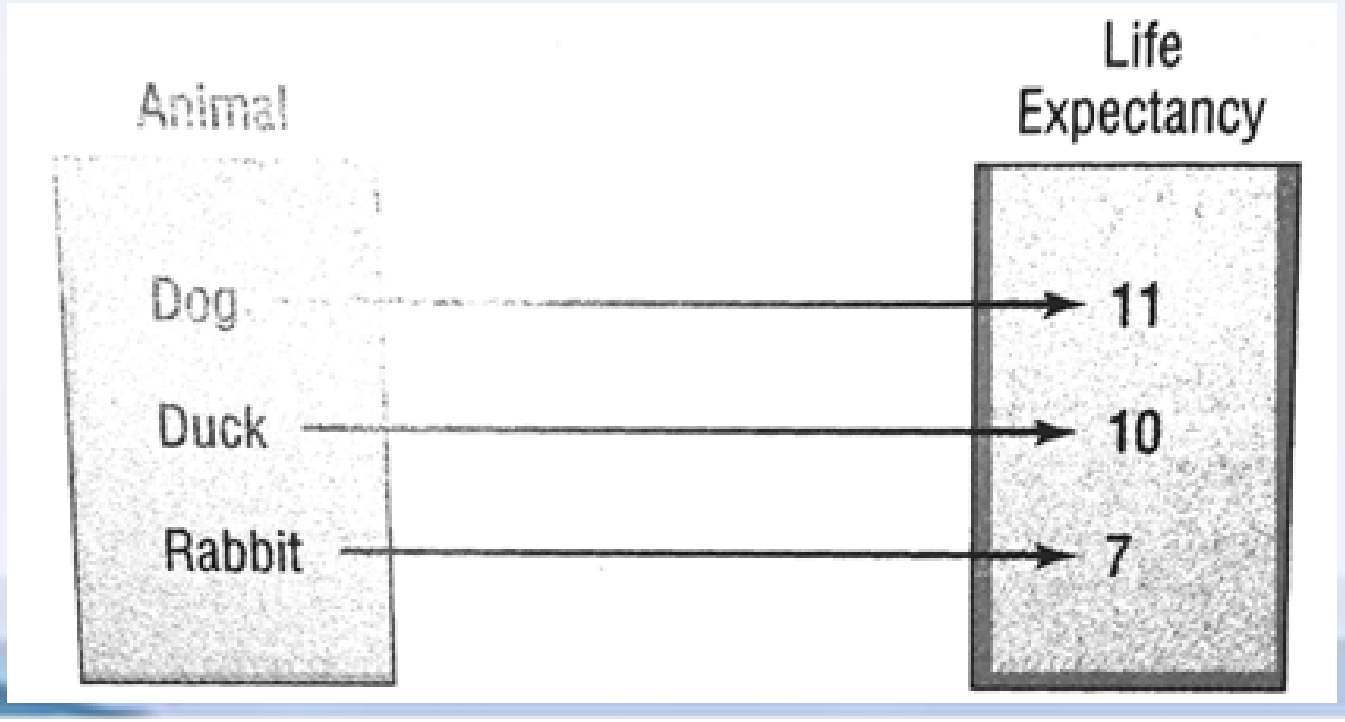
EXAMPLE.....

Maps and Ordered pairs as Relations



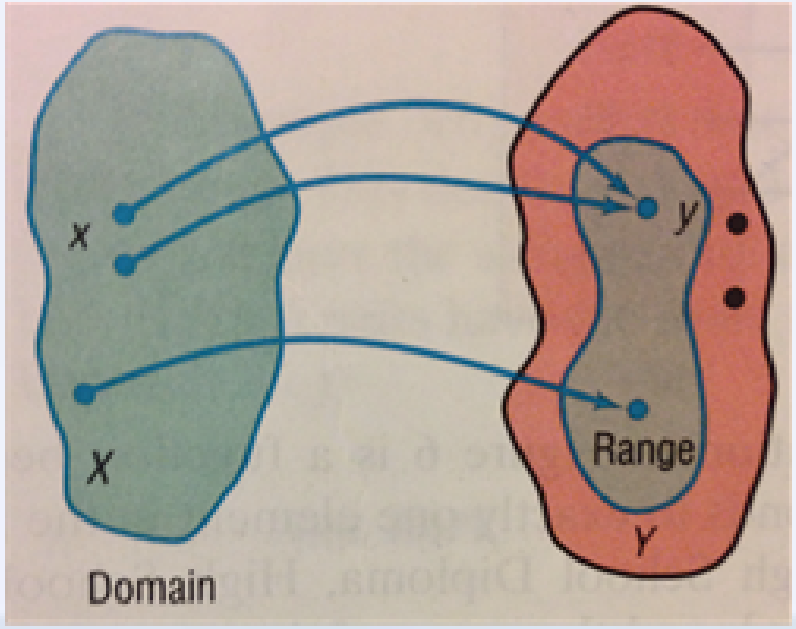
{ (Alaska, 7), (Arizona, 8), (California, 53), (Colorado, 7), (Florida, 25), (North Dakota, 1)}


Weight (grams)
IQ
1367
1391
1342
123
92
104
111


Animal
Life Expectancy
Dog
Duck
Rabbit
11
10
7

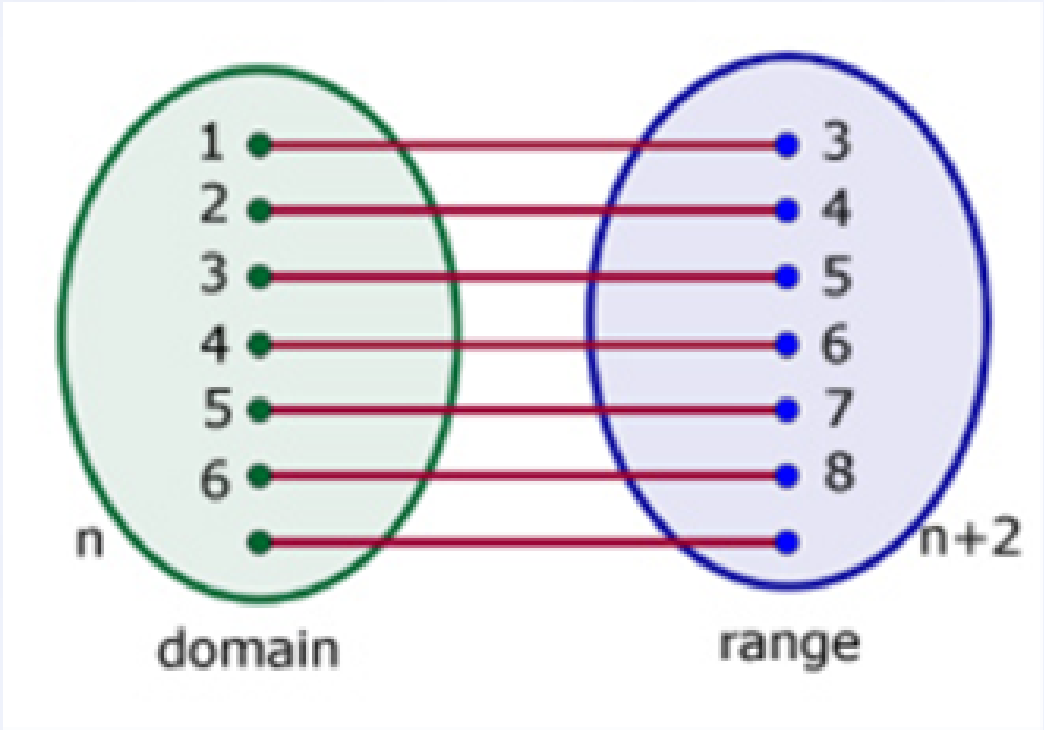
FUNCTION

Let x and y be two nonempty sets. *A function from x into y is a relation that associates with each element of x with exactly one element of y.



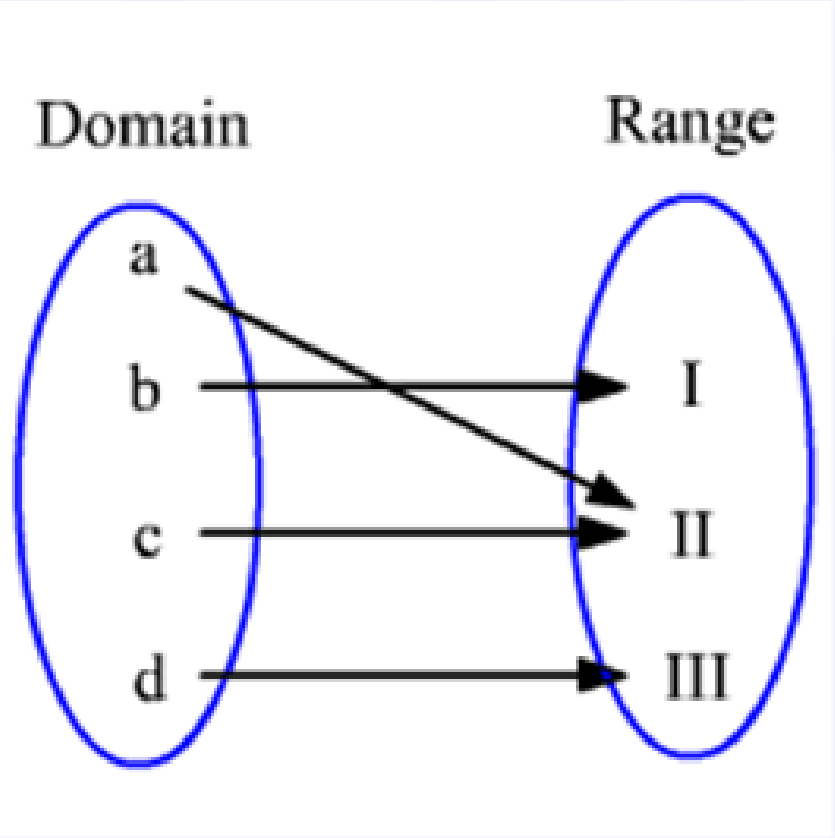
EXAMPLE.....

Determine whether a relation represents a function



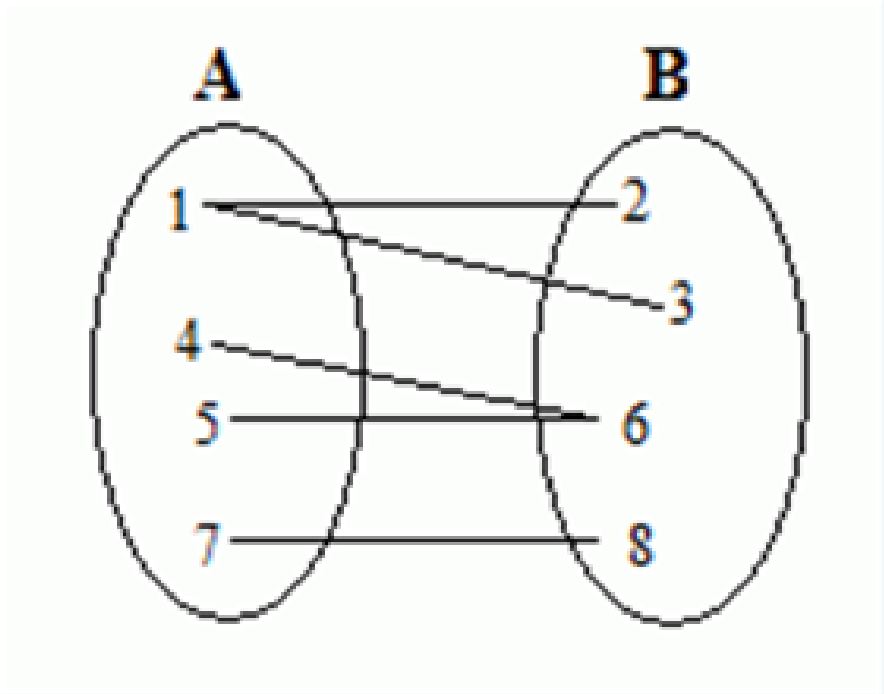
EXAMPLE.....

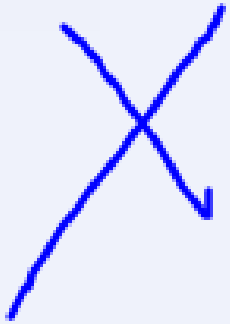
Determine whether a relation represents a function



EXAMPLE.....

Determine whether a relation represents a function





EXAMPLE.....

Determine whether a relation represents a function

Determine whether each relation represents a function. If it is a function, state the domain and range.

{(2,3), (4,1), (3,-2), (2,-1)}

{(-2,3), (4,1), (3,-2), (2,-1)}

{(2,3), (4,3), (3,3), (2,-1)}

EXAMPLE.....

Determine whether an equation is a function

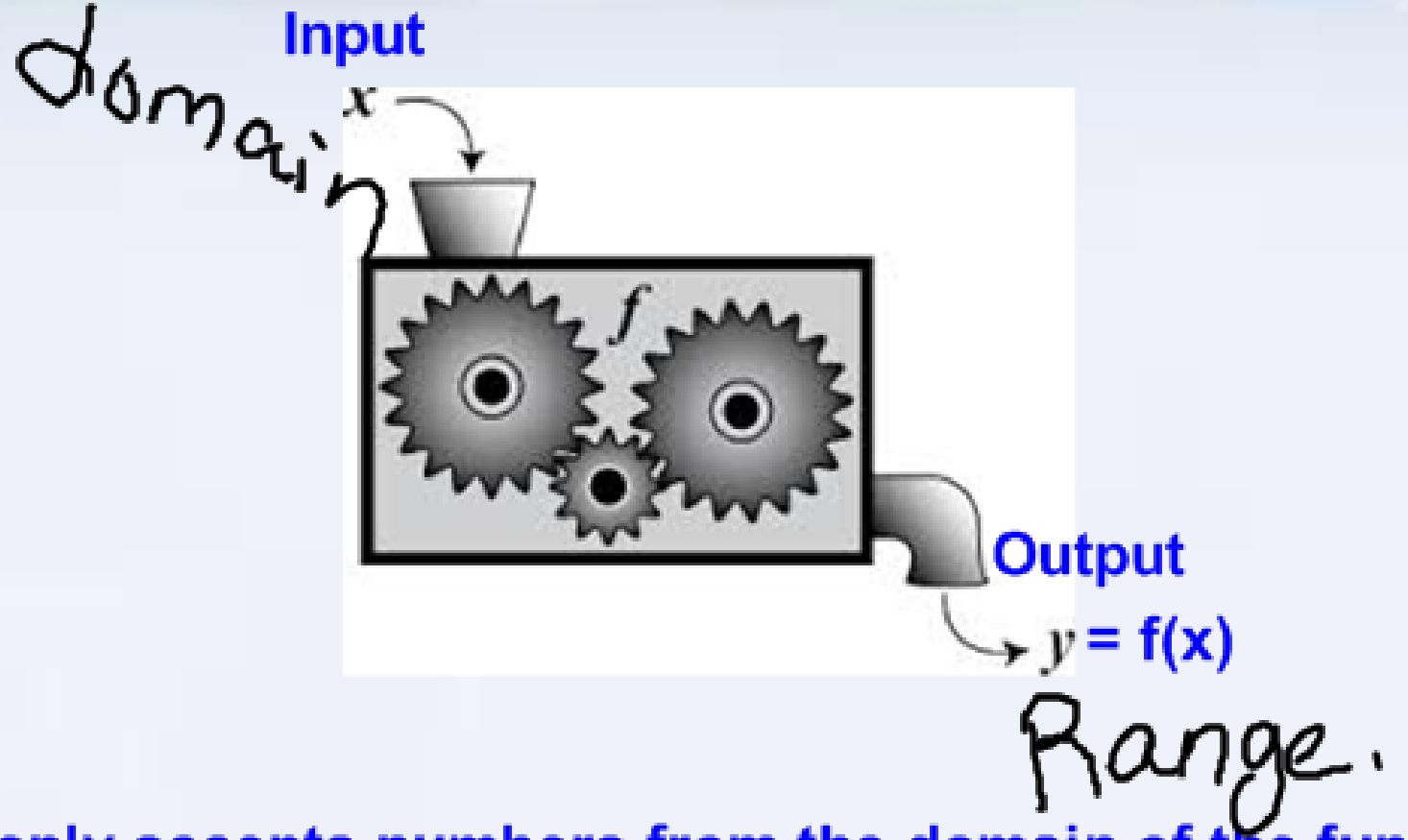
Determine is the equation $y = -\frac{1}{2}x - 3$ defines y as a function of x. We can do this by graphing the equation and seeing whether it passes the vertical line test.

Determine if the equation $x = 2y^2 + 1$ defines y as a function of x. We can do this by first solving for y then seeing if the graph passes the vertical line test.

OBJECTIVE 2

FIND THE VALUE OF A FUNCTION

FUNCTION MACHINE



1) It only accepts numbers from the domain of the function

2) For each input, there is exactly one output (which may be repeated for different inputs).

EXAMPLE.....

Finding Values of a Function

For the Function f defined by $f(x) = -3x^2 + 2x$, Evaluate.

(a) f(3) $= -3(3)^2 + 2(3)$

(b) f(-x) $-3(9) + 2(3)$

(c) f(x+3) $-27 + 6$

(d) f(x) + f(3) $f(3) = -21$

(e) f(3x)

DAY1 ASSIGNMENT

Page 68 #39

EXAMPLE.....

Finding Values of a Function on a Calculator

(a) $f(x) = x^2$; $f(1.234)$

(b) $F(x) = \frac{1}{x}$; $F(1.234)$

(c) $g(x) = \sqrt{x}$; $g(1.234)$