



Sets: Infinity

NAME:

CLASS:

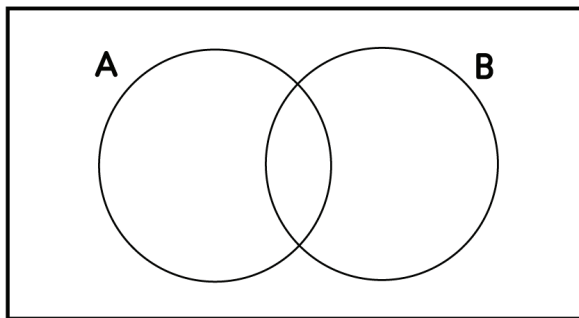
DATE:



Basic

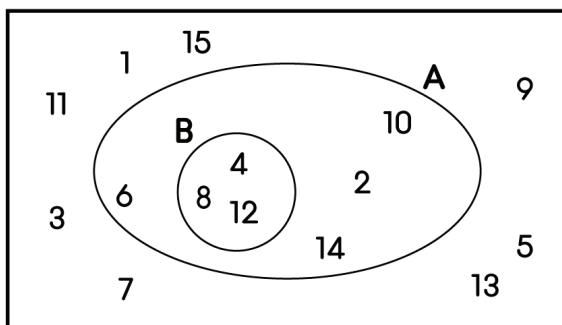
1) Set A = 1, 5, 7, 10, 15 Set B = 2, 5, 8, 10, 12, 15

a) Complete the Venn diagram below by including all the whole numbers between 1 and 15.



b) What is the intersection of A and B?

2) The whole numbers 1 to 15 are included in the Venn diagram below.



a) List Set A.

b) List Set B.

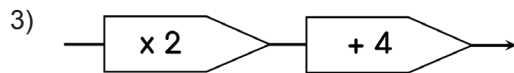
c) Describe both sets in words.

d) What is the complement of Set A?



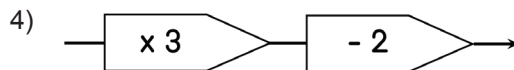
Sets: Infinity

Basic



What will come out of this number machine if you put in:

- a) 2 b) 5 c) 10 d) 50



What went in to this number machine if the result is:

- a) 4 b) 13 c) 31 d) 58

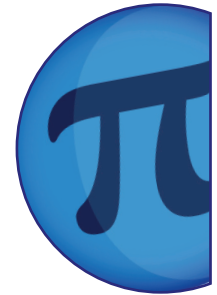


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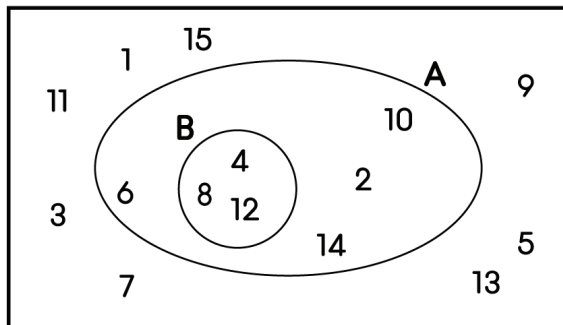
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Core

1) The whole numbers 1 to 15 are included in the Venn diagram below.



a) List Set A.

b) List Set B.

c) Describe both sets in words.

d) What is the complement of Set A?

2) The universal set is 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

Set A = 1, 5, 7, 10, 15.

Set B = 2, 5, 8, 10, 12, 15.

a) Show the above information in a Venn diagram.

b) Give $A \cap B$.

c) Give $A \cup B$.

d) Give A' .



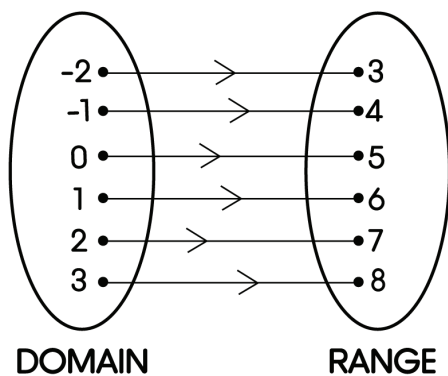
Sets: Infinity

Core

3) Given the domain set as $-2, -1, 0, 1, 2, 3$ and the range set as $3, 4, 5, 6, 7, 8$ as shown in the mapping diagram below:

a) Draw this mapping as a function machine.

b) Give an algebraic function that describes this function.



4) a) Draw a similar mapping diagram for the function machine $\boxed{\times 2} \rightarrow \boxed{+ 4} \rightarrow$ using $-2, -1, 0, 1, 2, 3$ as the domain the set.

b) Give the range set for this function.

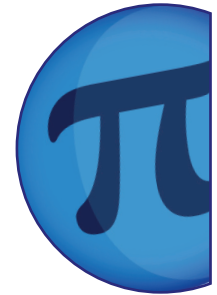


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Advanced

1) The universal set is 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

Set A = 1, 5, 7, 10, 15.

Set B = 2, 5, 8, 10, 12, 15.

a) Show the above information in a Venn diagram.

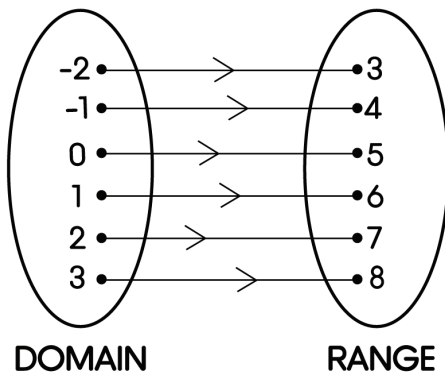
b) Give $A \cap B$.

c) Give $A \cup B$.

d) Give A' .

2) Given the domain set as -2, -1, 0, 1, 2, 3 and the range set as 3, 4, 5, 6, 7, 8 as shown in the mapping diagram below:

a) Draw this mapping as a function machine.



b) Give an algebraic function that describes this function.



Sets: Infinity

Advanced

3) a) Draw a similar mapping diagram for the function machine $\rightarrow \boxed{x^2} \rightarrow \boxed{+4} \rightarrow$ using $-2, -1, 0, 1, 2, 3$ as the domain the set.

b) Give the range set for this function.

4) a) Draw a similar mapping diagram for the function machine $\rightarrow \boxed{x^2} \rightarrow \boxed{-3} \rightarrow$ using $-1, 0, 1, 2, 3, 4$ as the domain the set.

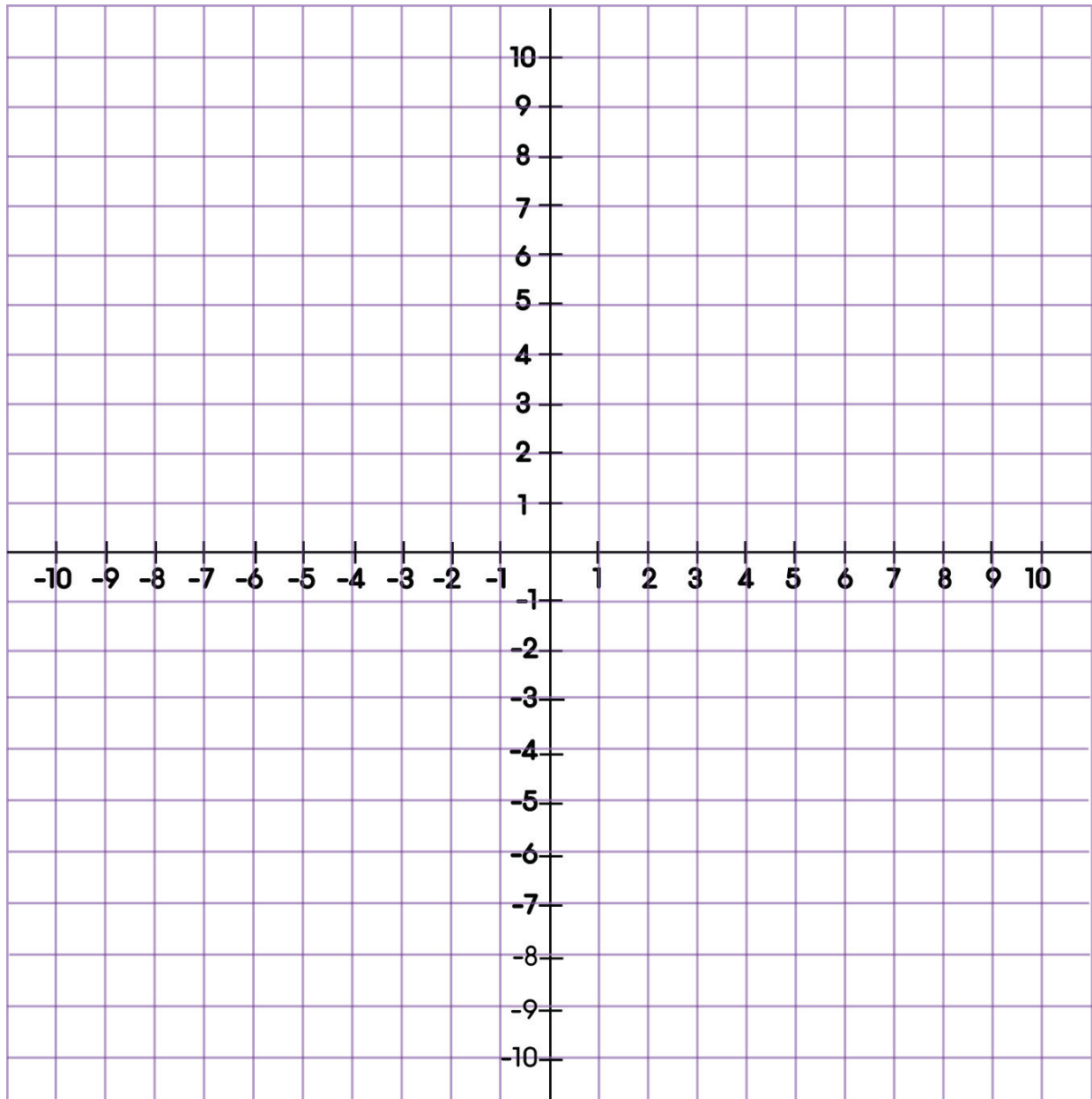
b) Give the range set for this function.



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Advanced

c) Draw a graph of the range set against the domain.



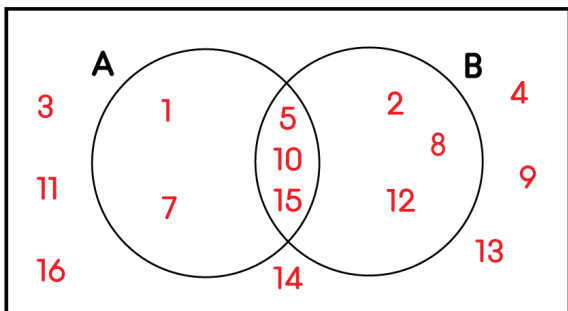


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ANSWERS

Basic

1) a)



b) 5, 10, 15

2) a) 2, 4, 6, 8, 10, 12, 14

c) A = multiples of 2; B = multiples of 4

b) 4, 8, 12

d) 1, 3, 5, 7, 9, 11, 13, 15

3) a) 8

b) 14

c) 24

d) 104

4) a) 2

b) 5

c) 11

d) 20

Core

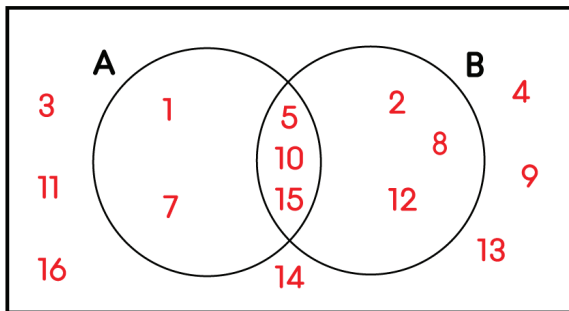
1) a) 2, 4, 6, 8, 10, 12, 14

c) A = multiples of 2. B = multiples of 4

b) 4, 8, 12

d) 1, 3, 5, 7, 9, 11, 13, 15

2) a)

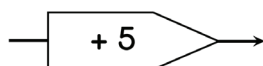


b) 5, 10, 15

c) 1, 2, 5, 7, 8, 10, 12, 15

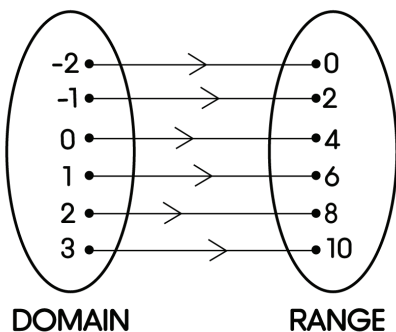
d) 2, 3, 4, 6, 9, 11, 12, 13, 14

3) a)



b) $f(x) = x + 5$

4) a)



b) 0, 2, 4, 6, 8, 10

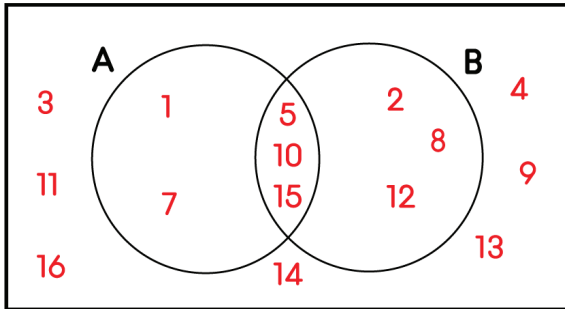


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ANSWERS

Advanced

1) a)

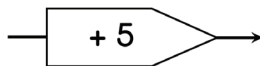


b) 5, 10, 15

c) 1, 2, 5, 7, 8, 10, 12, 15

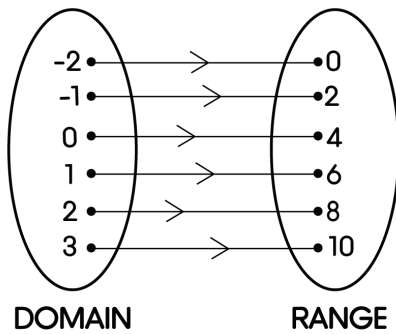
d) 2, 3, 4, 6, 8, 9, 11, 12, 13, 14

2) a)



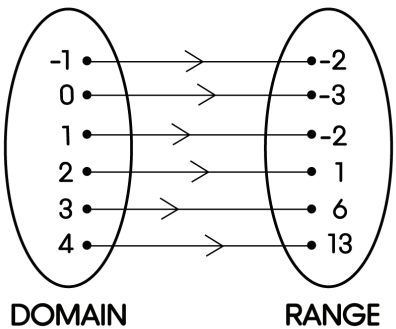
b) $f(x) = x + 5$

3) a)



b) 0, 2, 4, 6, 8, 10

4) a)



b) -2, -3, -2, 1, 6, 13

c)

