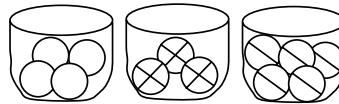


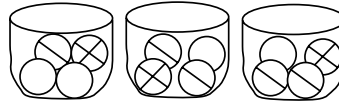
MEAN / AVERAGE - A

THE **MEAN** IS A NUMBER THAT BEST DESCRIBES ALL OF THE DATA IN A SET. THE **MEAN** IS ALSO CALLED THE **AVERAGE**.

YOU HAVE THREE DIFFERENT CONTAINERS OF MARBLES.



TO FIND THE MEAN YOU WOULD NEED TO MOVE THE MARBLES SO THAT EACH CONTAINER HAS THE SAME NUMBER OF MARBLES.



THE MEAN IS 4. IF SOMEONE ASKED, "ABOUT HOW MANY MARBLES ARE IN EACH CONTAINER?" 4 WOULD BE THE BEST ANSWER.

HELPFUL EXAMPLE

FIND THE MEAN BY REWRITING THE PROBLEM SO THAT EACH PIECE HAS THE SAME AMOUNT.

1. MOVE THE "X"s SO THAT EACH CONTAINER HAS THE SAME AMOUNT. WHAT IS THE MEAN? 3

3 3 3 3

2. WHAT IS THE MEAN? 4

4 4 4 4 4

3. WHAT IS THE MEAN? 5

5 5 5 5 5 5

4. WHAT IS THE MEAN? 7

7 7 7 7 7

5. 2 1 6 \Rightarrow 3 3 3 WHAT IS THE MEAN? 3

ANSWERS - A

MEAN / AVERAGE - B

THERE'S ANOTHER WAY TO FIND THE MEAN

- ADD ALL THE AMOUNTS TOGETHER.
- DIVIDE THAT ANSWER BY THE NUMBER OF PIECES IN THE SET.

HELPFUL EXAMPLE 1

$$\underbrace{3, 2, 1, 6}_{4} \Rightarrow 3 + 2 + 1 + 6 = 12$$

$$12 \div 4 = 3. \text{ MEAN} = 3$$

HELPFUL EXAMPLE 2

$$\underbrace{2, 6, 7}_{3} \Rightarrow \frac{2+6+7}{3} = \frac{15}{3} = 5 \text{ MEAN}$$

FIND THE MEAN.

1. 1, 3, 6, 4, 1

ADD THE NUMBERS: 15

DIVIDE BY HOW MANY THERE ARE: $15 \div 5 = 3$

2. 2, 5, 2, 1, 2, 1, 1

ADD THE NUMBERS: 14

DIVIDE BY HOW MANY THERE ARE: $14 \div 7 = 2$

3. 4, 0, 6, 5, 5

4

4. 7, 13, 10

10

5. 3, 1, 4, 3, 1, 0

2

6. 2, 4, 0, 1, 0, 2, 5

2

7. 9, 6, 4, 7, 1, 3

5

8. 14, 5, 9, 4

8

9. 5, 3, 4, 5, 4, 3

4

10. 1, 15, 3, 9

7

11. 6, 4, 5, 8, 6, 7

6

A SET OF NUMBERS MAY CONTAIN A VALUE THAT IS MUCH HIGHER OR LOWER THAN THE OTHER NUMBERS. THIS IS CALLED AN **OUTLIER**.

HELPFUL EXAMPLE

13, 12, 1, 14

THE OUTLIER IS 1. IT'S MUCH SMALLER THAN THE OTHER NUMBERS.

MEAN WITH OUTLIER: $13 + 12 + 1 + 14 = 40 \div 4 = 10$

MEAN WITHOUT OUTLIER: $13 + 12 + 14 = 39 \div 3 = 13$

DO YOU SEE HOW THE OUTLIER MAKES OUR MEAN LOWER? IT MAKES OUR MEAN **LIE**.

FIND THE OUTLIER.

FIND THE MEAN WITH AND WITHOUT THE OUTLIER.

12. 2, 3, 1, 16, 2, 1, 3

OUTLIER: 16

MEAN WITH OUTLIER: 4

MEAN WITHOUT OUTLIER: 2

13. 70, 80, 70, 10, 80

OUTLIER: 10

MEAN WITH OUTLIER: 62

MEAN WITHOUT OUTLIER: 75