Starter

1. $6 + 9 = ?$
2. $24 \div 4 = ?$
3. $7 + 13 + 5 = ?$
4. $30 \div 5 = ?$
5. How do we work out the mean?
6. How do we work out the median?
7. Find the mean of: $3,\ 7,\ 5,\ 9$
8. Find the median of: $4,\ 9,\ 2,\ 7,\ 8$
9. Find the mean of: $\frac{1}{2},\ \frac{3}{2},\ 2,\ 3$
10. Find the median of: $-4,\ 2,\ -1,\ -7,\ 1$
11. The mean of $x,\ x + 4,\ x + 8,\ x + 12$ is 15, what is the total of all the values?
12. Find the value of x in the previous question

Starter – Solutions

1. $6 + 9 = ?$ 15
2. $24 \div 4 = ?$ 6
3. $7 + 13 + 5 = ?$ 25
4. $30 \div 5 = ?$ 6

5. How do we work out the mean? Add the values and divide by how many there are
6. How do we work out the median? Order the data and find the middle value
7. Find the mean of: $3,\ 7,\ 5,\ 9 = 6$
8. Find the median of: $4,\ 9,\ 2,\ 7,\ 8 = 7$
9. Find the mean of: $\frac{1}{2},\ \frac{3}{2},\ 2,\ 3 = \frac{7}{4}$
10. Find the median of: $-4,\ 2,\ -1,\ -7,\ 1 = -1$
11. The mean of $x,\ x + 4,\ x + 8,\ x + 12$ is 15, what is the total? 60
12. Find the value of x $x = 9$

Starter

1. $3 + 7 + 10 = ?$
2. $48 \div 6 = ?$
3. $\frac{1}{2} + \frac{1}{4} = ?$
4. $28 \div 4 = ?$

5. Which average requires you to order the data first?
6. Find the median of: $7,\ 2,\ 9,\ 4,\ 5$
7. Find the median of: $3,\ 8,\ 1,\ 6,\ 4,\ 10$
8. Find the mean and median of: $2,\ 5,\ 3,\ 8,\ 7$. Which is larger?
9. Find the mean and median of: $-5,\ 1,\ -2,\ 4,\ 7$
10. The mean of $a,\ a+3,\ a+6$ is 6.
    - What is the median in terms of a
    - What is the total of the data (use the mean)
    - Find a

Starter – Solutions

1. $3 + 7 + 10 = ?$ 20
2. $48 \div 6 = ?$ 8
3. $\frac{1}{2} + \frac{1}{4} = ?$ $\frac{3}{4}$
4. $28 \div 4 = ?$ 7

5. Which average requires ordering first? Median
6. Median of $7,\ 2,\ 9,\ 4,\ 5 = 5$
7. Median of $3,\ 8,\ 1,\ 6,\ 4,\ 10 = 5$
8. Mean and median of $2,\ 5,\ 3,\ 8,\ 7$ Mean $= 5,$ median $= 5$
9. Mean and median of $-5,\ 1,\ -2,\ 4,\ 7$ Mean $= 1,$ median $= 1$
10. Mean of $a,\ a+3,\ a+6$ is 6
    - Median $= a + 3$
    - Total $= 18$
    - $a = 3$

Starter

1. $4 + 11 = ?$
2. $40 \div 8 = ?$
3. $\frac{3}{4} - \frac{1}{4} = ?$
4. $72 \div 9 = ?$

5. A shoe shop owner says, "The most popular size last week was size 6." Which average is she using?
6. Find the mode of: 3, 7, 3, 9, 5, 3, 7
7. Find the mode of: 2, 5, 8, 5, 3, 8, 1
8. Find the mean and median of: 4, 7, 2, 9, 3
9. Find the mean, median and mode of: 5, 3, 7, 3, 5, 5, 9
10. The data set is $\{4,\ 7,\ 4,\ x,\ 7,\ 3\}$ The **only** mode is 4. Find x and explain your reasoning.

Starter – Solutions

1. $4 + 11 = ?$ 15
2. $40 \div 8 = ?$ 5
3. $\frac{3}{4} - \frac{1}{4} = ?$ $\frac{1}{2}$
4. $72 \div 9 = ?$ 8

5. Which average is used? Mode
6. Mode of 3, 7, 3, 9, 5, 3, 7 3
7. Mode of 2, 5, 8, 5, 3, 8, 1 5 and 8
8. Mean and median of 4, 7, 2, 9, 3 Mean $= 5$, median $= 4$
9. Mean, median and mode of 5, 3, 7, 3, 5, 5, 9 Mean $= \frac{37}{7}$, median $= 5$, mode $= 5$
10. Only mode is 4 $x = 4$

Starter

1. $3 + 4 = ?$
2. $4 \times 8 = ?$
3. $-3 + 8 + (-5) = ?$
4. $\frac{2}{3} + \frac{1}{6} = ?$
5. $-12 \div 4 = ?$
6. $\frac{3}{4} \times 8 = ?$

7. A class votes for their favourite colour. Can you find the mean? Which average should you use instead, and why?
8. Find the mean, median and mode of: $-3,\ 1,\ -3,\ 4,\ -1,\ 2,\ -3$
9. Find the median of: $\frac{1}{4},\ \frac{3}{4},\ \frac{1}{2},\ \frac{1}{8},\ \frac{5}{8}$
10. The ages in a youth club are: 11, 12, 12, 13, 13, 13, 14, 42 Which average would you not use for this example, and why?
11. The mean of $\{x,\ 3,\ x,\ 7,\ 5\}$ is 6. Find x and state the mode.
12. Five numbers have mean 8, median 7 and unique mode of 5. Two numbers are 5 and 5. Find a possible set.

Starter – Solutions

1. $3 + 4 = ?$ 7
2. $4 \times 8 = ?$ 32
3. $-3 + 8 + (-5) = ?$ 0
4. $\frac{2}{3} + \frac{1}{6} = ?$ $\frac{5}{6}$
5. $-12 \div 4 = ?$ -3
6. $\frac{3}{4} \times 8 = ?$ 6

7. Can you find the mean? No — data is categorical
8. Mean, median and mode Mean $= -\frac{3}{7}$, median $= -1$, mode $= -3$
9. Median $= \frac{1}{2}$
10. Which average not to use and why? Mean, because 42 is an outlier
11. $x =?$ and mode $x = 6$, mode $= 6$
12. Possible set $\{5, 5, 6, 7, 17\}$

Starter

1. $3 + 8 = ?$
2. $120 \div 10 = ?$
3. $-6 + (-2) + 5 = ?$
4. Order from smallest to largest: $\frac{1}{3}, \frac{5}{6}, \frac{1}{2}, \frac{2}{3}$
5. $3\frac{1}{2} + 2\frac{3}{4} = ?$
6. $-20 \div 4 = ?$
7. Find the mean, median and mode of: $-6,\ -2,\ 4,\ -3,\ 7,\ 0,\ -2$
8. True or False? "Adding 10 to every value increases the mean by 10 but leaves the median unchanged."
9. The seven values $n-9,\ n-6,\ n-3,\ n,\ n+3,\ n+6,\ n+9$ have a mean of 4. State the median **without calculation**.
10. A set of five positive integers has mean = median = mode = 6.
    - What is the smallest possible range?
    - What is the largest possible range?

Starter – Solutions

1. $3 + 8 = ?$ 11
2. $120 \div 10$ 12
3. $-6 + (-2) + 5$ -3
4. Order $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{5}{6}$
5. $3\frac{1}{2} + 2\frac{3}{4}$ $6\frac{1}{4}$
6. $-20 \div 4$ -5
7. Mean, median, mode Mean $= -\frac{2}{7}$, median $= -2$, mode $= -2$
8. True or False? True
9. Median 4
10. Range Smallest $= 1$, largest $= 12$