

Algebra and BODMAS (Junior UKMT)

These questions must be attempted without a calculator

Topics covered in the questions below may not necessarily be from the topic of the title.

1. Which of the following expressions gives the largest number?

A $1 \times 9 + 9 \times 7$

B $1 + 9 + 9 + 7$

C $1 \times 9 + 9 + 7$

D $1 + 9 \times 9 + 7$

E $1 + 9 + 9 \times 7$

2. $2 \times 17 + 3 \times 17 + 5 \times 17$ equals

A 160

B 170

C 868

D 10778

E 14960

3. Lisa's bucket does not have a hole in it and weighs 21 kg when full of water. After she pours out half the water from the bucket, it weighs 12 kg.

What is the weight of the empty bucket?

A 1 kg

B 2 kg

C 3 kg

D 4 kg

E 5 kg

4. Which of the following statements is false?

A $3 + 5 \times 4 = 23$

B $20 - 5 \times 4 = 0$

C $12 - 5 \times 2 = 2$

D $3 + 6 \times 4 = 36$

E $5 \times 3 - 2 = 13$

5. Which one of these calculations is **incorrect**?

A $4 \times 5 + 67 = 45 + 6 \times 7$

B $3 \times 7 + 48 = 37 + 4 \times 8$

C $6 \times 3 + 85 = 63 + 8 \times 5$

D $2 \times 5 + 69 = 25 + 6 \times 9$

E $9 \times 6 + 73 = 96 + 7 \times 3$

6. What is the value of $19 + 99 + 19 \times 99$?

A 236

B 1999

C 11701

D 13563

E none of these

7. Given that $\frac{1}{12} + \frac{1}{24} = \frac{1}{x}$, what is the value of x ?

A $\frac{1}{18}$

B $\frac{1}{8}$

C 8

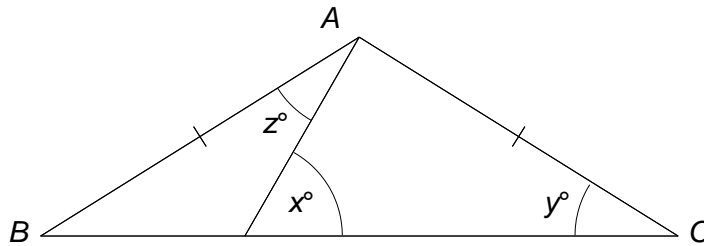
D 18

E 36

8. The number of diagonals of a regular polygon equals twice the number of sides.
How many sides has the polygon?

A 4 B 5 C 6 D 7 E 8

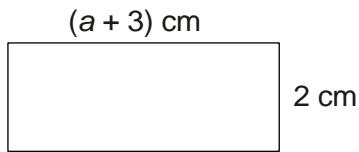
9. Given that $AB = AC$ and $z < 90$, which of the following expressions must equal z ?



A $x - y$ B $x + y$ C $x + y - 180$ D $180 + x - y$ E $180 - x + y$

10. A rectangle is formed by doubling both the length and the width of the rectangle shown in the diagram.

What is the area, in cm^2 , of this new rectangle?



A $2a + 10$ B $4a + 12$ C $4a + 20$ D $8a + 6$ E $8a + 24$

11. Which of these calculations produces a multiple of 5?

A $1 \times 2 + 3 + 4$ B $1 + 2 \times 3 + 4$ C $1 \times 2 + 3 \times 4$
D $1 + 2 \times 3 \times 4$ E $1 \times 2 \times 3 \times 4$

12. What is the value of $0.1 + 0.2 + 0.3 \times 0.4$?

A 0.24 B 0.312 C 0.42 D 1.0 E 1.5