

Year 7 maths worksheet

Year 7 | KS3

Name _____ Class _____ Date _____

Score _____ / 24

Show your working in the space and write each answer in the box. A calculator is not needed. Give fractions in their simplest form.

Example: $\frac{2}{3} + \frac{1}{4} = \frac{8}{12} + \frac{3}{12} = \frac{11}{12}$. Write both fractions with a common denominator, then add the numerators.

Section A · Number and algebra fluency

1. $-7 + 12 =$

2. $-4 \times 6 =$

3. $3 + 4 \times 5 =$

4. $(18 - 6) \div 3 =$

5. $\frac{2}{5} + \frac{1}{3} =$

6. $0.6 \times 0.4 =$

7. Write $\frac{3}{8}$ as a decimal.

8. Simplify $4a + 3b - a + 5b$.

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Section B · Reasoning

9. Find 15% of 80.

Answer

10. Share £35 in the ratio 2 : 5.

Answer

11. Work out the value of $3x - 2$ when $x = 6$.

Answer

12. Solve $x + 9 = 23$.

Answer

13. Two angles on a straight line add to 180° . One angle is 68° .
Find the other angle.

Answer

14. Two angles in a triangle are 47° and 85° . Find the third angle.

Answer

15. Find the mean of 4, 7, 9, 12 and 13.

Answer

16. Find the median of 15, 3, 9, 21 and 6.

Answer

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Section C · Problem solving

17. A rectangle measures 12 cm by 7.5 cm. Find its area.

Answer

18. Find the perimeter of the same 12 cm by 7.5 cm rectangle.

Answer

19. Write the next two terms of the sequence 5, 11, 17, 23, ...

Answer

20. Find the n th term of the sequence 5, 11, 17, 23, ...

Answer

21. The temperature is -6°C . It rises by 15°C . What is the new temperature?

Answer

22. Round 3.4782 to 2 decimal places.

Answer

23. A pen costs 45p. Find the cost of 12 pens in pounds.

Answer

24. Find the highest common factor (HCF) of 24 and 36.

Answer

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Check each answer and its method. Equivalent forms are correct unless a question asks for a particular form or degree of accuracy.

Section A · Number and algebra fluency

1. **5**

Start at -7 and move 12 to the right on a number line: $-7 + 12 = 5$.

2. **-24**

A negative multiplied by a positive is negative: $4 \times 6 = 24$, so -24 .

3. **23**

Multiply before adding: $4 \times 5 = 20$, then $3 + 20 = 23$.

4. **4**

Brackets first: $18 - 6 = 12$, then $12 \div 3 = 4$.

5. **11/15**

Use the common denominator 15: $6/15 + 5/15 = 11/15$.

6. **0.24**

$6 \times 4 = 24$. There are two decimal places in the question, so 0.24.

7. **0.375**

Divide 3 by 8: $3 \div 8 = 0.375$.

8. **$3a + 8b$**

Collect like terms: $4a - a = 3a$ and $3b + 5b = 8b$.

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Section B · Reasoning

9. 12

10% of 80 is 8 and 5% is 4, so 15% is $8 + 4 = 12$.

10. £10 and £25

$2 + 5 = 7$ parts. One part is $£35 \div 7 = £5$, so £10 and £25.

11. 16

Substitute: $3 \times 6 - 2 = 18 - 2 = 16$.

12. $x = 14$

Subtract 9 from both sides: $x = 23 - 9 = 14$.

13. 112°

Angles on a straight line sum to 180° : $180^\circ - 68^\circ = 112^\circ$.

14. 48°

Angles in a triangle sum to 180° : $180^\circ - 47^\circ - 85^\circ = 48^\circ$.

15. 9

Total = 45. Divide by the 5 values: $45 \div 5 = 9$.

16. 9

Order the values: 3, 6, 9, 15, 21. The middle value is 9.

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Section C · Problem solving

17. 90 cm²

Area = length × width = $12 \times 7.5 = 90 \text{ cm}^2$.

18. 39 cm

Perimeter = $2 \times (12 + 7.5) = 2 \times 19.5 = 39 \text{ cm}$.

19. 29, 35

The sequence goes up by 6 each time: $23 + 6 = 29$ and $29 + 6 = 35$.

20. $6n - 1$

The difference is 6, so start with $6n$. $6 \times 1 = 6$ and the first term is 5, so subtract 1.

21. 9 °C

$-6 + 15 = 9$, so the new temperature is 9 °C.

22. 3.48

Look at the third decimal digit, 8. It is 5 or more, so round 3.47 up to 3.48.

23. £5.40

$45 \times 12 = 540\text{p}$. Divide by 100 to change to pounds: £5.40.

24. 12

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24. The largest that also divides 36 is 12.