1.8 Order of Operations and Calculator Methods: 30-minute Pack

Calculator allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out $5^2 + 4 \times 4$.

(3)

2 Calculate $5^2 + (8 - 3) \times 2$.

(1)

3 Write down the value of $\sqrt{144}$.

(1)

4 Work out $4 \times 2 + 3 \times (-8)$.

(3)

5 Work out $8^3 + 6^2$.

(2)

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6 Write down the value of the cube root of 64.

(1)

7 Work out 6 x 2 + 2 x (-4).

(3)

8 Work out 18 ÷ (3 + 3).

(1)

9 Use a calculator to work out 7.5 x 7.7 - 7.1.
Give your answer correct to 2 decimal places.

(2)

10 A calculator display shows 2.5×10^3. Write this value as an ordinary number.

(2)

11 A student writes 8 - 3 x 2 = (8 - 3) x 2. Explain the mistake and give the correct answer.

(2)

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12 A key sequence is entered into a scientific calculator: 6 + 4 x 3 =. The calculator applies the standard order of operations (BIDMAS). What number appears on the display, and why?

(2)

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13 Simplify 10 - 2 x 3 + (6 - 1).

(2)

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Mark scheme · 1.8 Order of Operations and Calculator Methods: 30-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

correct first operation applied by the order of operations (brackets, indices, then x and ÷)	M1
second correct stage of working	M1
41 cao	A1

Answer: **41**

Question 2

35 cao	B1

Answer: **35**

Question 3

12 cao	B1

Answer: **12**

Question 4

4 x 2 = 8 evaluated	M1
3 x (-8) = -24 evaluated	M1
-16 cao	A1

Answer: **-16**

Question 5

$8^3 = 512$ or $6^2 = 36$ found	M1
548 cao	A1

Answer: **548**

Question 6

4 cao	B1

Answer: **4**

Question 7

6 x 2 = 12 evaluated	M1
2 x (-4) = -8 evaluated	M1
4 cao	A1

Answer: **4**

Question 8

3 cao	B1

Answer: **3**

Question 9

correct use of brackets and order of operations (method shown or unrounded value seen)	M1
50.65 cao	A1

Answer: **50.65**

Question 10

recognition that $10^3 = 1000$ or shifting decimal 3 places	M1
2500 cao	A1

Answer: **2500**

Question 11

explanation that multiplication has priority so 3 x 2 must be done before subtraction	M1
2 cao	A1

Answer: **2**

Question 12

recognises that the calculator performs 4 x 3 before the addition	M1
18, with a correct reason given	A1

Answer: **18, because BIDMAS means multiplication is carried out before addition**

Question 13

correctly evaluates the multiplication and bracket, 2 x 3 = 6 and 6-1 = 5	M1
9 cao	A1

Answer: **9**

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