1.13 Order of Operations and Multi-Step Problems: Test Pack

Total Marks

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Calculate 8 + 3 x 5.

(1)

2 48 divided by 8 + 6 x 11 =

Answer: ___

(2)

3 3 + 10 x 6 - 8 =

Answer: ___

(2)

4 7 squared =

Answer: ___

(1)

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5 Calculate 2 x (45 - 28) + 36 ÷ 6.

(1)

6 There are 3 boxes of biscuits. Each box contains (4 + 2) x 3 biscuits. How many biscuits are there altogether?

(2)

7 Explain why the answers to 6 + 2 x 5 and (6 + 2) x 5 are different. Give a clear reason.

(2)

8 A gardener plants flower beds. Each flower bed needs (12 - 3) x 5 bulbs. He plants 4 beds. How many bulbs does he plant altogether? Then, if bulbs are sold in packs of 10, how many full packs does he need? Show working.

(4)

9 Work out (24 - 6) ÷ 3.

(1)

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10 Each minibus has 14 seats. There are 125 children to carry.

What is the smallest number of minibuses needed?

Answer: ___

(2)

---

11 (3 + 10) x 6 - 12 =

Answer: ___

(1)

---

12 4 x (7 - 1) + 3 squared =

Answer: ___

(1)

---

13 Notebooks cost £4.37 each. Ivan buys 9 and pays with £40.

How much change does Ivan get?

Answer: £___

(2)

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14 12 + 5 x 9 - 13 =

Answer: ___

(2)

---

15 Freya has 6,374 beads. Freya puts 2,948 aside and shares the rest equally between 6 friends.

How many beads does each friend get?

Answer: ___

(2)

---

16 Mia buys 12 keyrings costing 3p each and 9 bags costing 50p each.

Write one calculation to find the total cost in pence, then work it out.

Answer: ___ p

(2)

---

17 Calculate 150 - (24 x 4) + 6.

(1)

---

18 8 x (7 - 1) + 7 squared =

Answer: ___

(1)

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19 A rectangle is 8 m long and 3 m shorter than the width. The width is divided into 2 equal parts. Find the area of one part. Show your working.

(3)

---

20 Mia has 3,401 stickers. Mia puts 2,477 aside and shares the rest equally between 4 friends.

How many stickers does each friend get?

Answer: ___

(2)

---

21 Noah works out 6 + 9 x 5. Noah says the answer is 75. Is Noah correct? What is the correct answer?

Answer: ___

(2)

---

22 Zara buys 3 posters at £3.12 each and 4 T-shirts at £1.13 each. Zara pays with £15.

How much change does Zara get?

Answer: £___

(2)

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23 Books cost £5.45 each. Zara buys 5.

How much does Zara pay?

Answer: £___

(2)

---

24 Put one pair of brackets in this calculation to make it correct.

2 + 8 x 6 = 60

Write the calculation with the brackets in.

Answer: ___

(2)

---

25 Femi works out 6 + 4 x 6. Femi says the answer is 60. Is Femi correct? What is the correct answer?

Answer: ___

(2)

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Mark scheme · 1.13 Order of Operations and Multi-Step Problems: Test Pack

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

Question 1

23 cao	**B1**

Answer: **23**

Question 2

method seen	**M1**
72 cao	**A1**

Answer: **72**

Question 3

method seen	**M1**
55 cao	**A1**

Answer: **55**

Question 4

49 cao	**B1**

Answer: **49**

Question 5

40 cao	**B1**

Answer: **40**

Question 6

Evaluate (4 + 2) x 3 = 18 or show multiplication per box	**M1**
54 cao	**B1**

Answer: **54**

Question 7

Reference to order of operations, stating multiplication before addition or showing 2 x 5 done first for first expression	**M1**
Correct explanation that parentheses change the order so you add first in (6 + 2) x 5 leading to different results cao	**B1**

Answer: **Multiplication is done before addition unless brackets change the order; 6 + 2 x 5 = 6 + 10 = 16 but (6 + 2) x 5 = 8 x 5 = 40**

Question 8

Evaluate bulbs per bed correctly: (12 - 3) x 5 = 9 x 5 = 45	**M1**
Multiply by number of beds: 45 x 4 = 180	**M1**
Divide by 10 to find packs or show ceiling, e.g. 180 ÷ 10 = 18 seen	**M1**
180 bulbs and 18 packs cao	**B1**

Answer: **180 and 18**

Question 9

6 cao	**B1**

Answer: **6**

Question 10

125 / 14 = 8 remainder 13 seen	**M1**
9 cao	**A1**

Answer: **9**

Question 11

66 cao	**B1**

Answer: **66**

Question 12

33 cao	**B1**

Answer: **33**

Question 13

4.37 x 9 = 39.33 seen	**M1**
£0.67 cao	**A1**

Answer: **£0.67**

Question 14

method seen	**M1**
44 cao	**A1**

Answer: **44**

Question 15

3,426 seen	**M1**
571 cao	**A1**

Answer: **571**

Question 16

correct calculation seen	**M1**
486p cao	**A1**

Answer: **486p**

Question 17

60 cao	**B1**

Answer: **60**

Question 18

97 cao	**B1**

Answer: **97**

Question 19

Correctly use width = length + 3 or substitute: width = 8 + 3 = 11 seen	**M1**
Divide width by 2 and multiply by length or area method shown, e.g. (11/2) x 8 seen	**M1**
44 m² cao	**B1**

Answer: **44**

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Question 20

924 seen	M1
231 cao	A1

Answer: **231**

Question 21

multiplies before adding	M1
51 cao	A1

Answer: **51**

Question 22

9.36 seen	M1
£1.12 cao	A1

Answer: **£1.12**

Question 23

5.45 x 5 method seen	M1
£27.25 cao	A1

Answer: **£27.25**

Question 24

the brackets round the addition	M1
(2 + 8) x 6 = 60 cao	A1

Answer: **(2 + 8) x 6 = 60**

Question 25

multiplies before adding	M1
30 cao	A1

Answer: **30**

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