FOUNDATION

1.10 BIDMAS: 2-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Work out (8 + 12) / 4

(Total for Question 1 is 1 mark)

2 Work out 7 + 6 x 2

(Total for Question 2 is 1 mark)

3 Work out 63 / (9 - 2) - 5

(Total for Question 3 is 2 marks)

4 Work out 2^4 / 4 + 6

(Total for Question 4 is 2 marks)

5 Work out (16 - 9) x (11 - 5)

(Total for Question 5 is 2 marks)

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6 Work out (11 - 4) x 5

(Total for Question 6 is 1 mark)

7 Work out 5^2 - 9

(Total for Question 7 is 1 mark)

8 Work out 9 x (12 - 8)

(Total for Question 8 is 1 mark)

9 Work out (24 + 16) / 8

(Total for Question 9 is 1 mark)

10 Work out 4 x 3^2 - 11

(Total for Question 10 is 2 marks)

11 Work out (8 + 2) x 4.

(Total for Question 11 is 1 mark)

12 Work out 18 / 3 + 2.

(Total for Question 12 is 1 mark)

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13 Work out 5 x 4 + 7.

(Total for Question 13 is 1 mark)

14 Work out (9 - 5) x 6.

(Total for Question 14 is 1 mark)

15 Work out 45 / 9 - 2.

(Total for Question 15 is 1 mark)

16 Work out $(5 + 3)^2$ / 4 x 2

(Total for Question 16 is 3 marks)

17 Work out 100 - 2 x $(15 - 4^2)$

(Total for Question 17 is 3 marks)

18 Work out 5 x 2^3 - 40 / 5

(Total for Question 18 is 3 marks)

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19 Work out $5 + 100 / (2 + 3)^2$

(Total for Question 19 is 3 marks)

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

(Total for Question 20 is 3 marks)

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21 Work out $(15 - 7) / 4 + 2$.

(Total for Question 21 is 2 marks)

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22 Work out $2^3 \times 5$.

(Total for Question 22 is 1 mark)

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23 Work out $5 + (6 - 2)^2$.

(Total for Question 23 is 2 marks)

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24 Work out $12 / (2 + 1) + 7$.

(Total for Question 24 is 2 marks)

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25 Work out (9 - 3) x (2 + 5).

(Total for Question 25 is 2 marks)

26 Work out 3^3 - 10.

(Total for Question 26 is 1 mark)

27 Work out $(9 - 4)^2$ - 10.

(Total for Question 27 is 2 marks)

28 Work out 3 + (12 - 4) / 2^2.

(Total for Question 28 is 3 marks)

29 Work out 3 + 4 x 2^2.

(Total for Question 29 is 2 marks)

30 Work out 18 - 2^3 x 2 + 5.

(Total for Question 30 is 3 marks)

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31 Work out -12 + 5 x (3 - 7).

(Total for Question 31 is 2 marks)

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32 Work out $(9 + 3^2) / 3 - 1$.

(Total for Question 32 is 3 marks)

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33 Work out $50 - (12 + 4)^2 / 8$.

(Total for Question 33 is 3 marks)

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34 Work out 6 / 2 x (1 + 2).

(Total for Question 34 is 3 marks)

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35 Work out $8 - 3 \times 2^2 + (6 / 3)$.

(Total for Question 35 is 4 marks)

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36 Priya calculates $(7 + 2) \times 3^2$ incorrectly as $7 + 2 \times 3^2$.
Work out Priya's answer and the correct answer. Find the difference between the two answers.

(Total for Question 36 is 3 marks)

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37 Work out $3 \times (7 - 2)^2 - (20 / 4)$.

(Total for Question 37 is 3 marks)

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38 Work out $40 - (12 - 4) \times 3 + 2^3$.

(Total for Question 38 is 4 marks)

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39 Show that $(18 - 2^3) / (4 - 2) \times 3 = 15$.

(Total for Question 39 is 4 marks)

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40 Insert one pair of brackets into 4 + 6 x 3 - 2 so that the calculation is equal to 28. Write out the calculation with the brackets in place and show that it equals 28.

(Total for Question 40 is 2 marks)

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41 Work out $(2 + (3^2 - 1)) \times (5 - 3) + 2^3$.

(Total for Question 41 is 4 marks)

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Mark scheme · 1.10 BIDMAS: 2-hour Pack

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

Question 1

5 cao **B1**

Answer: 5

Question 2

19 cao **B1**

Answer: 19

Question 3

9 - 2 = 7 and 63 / 7 = 9 seen **M1**

4 cao **A1**

Answer: 4

Question 4

2^4 = 16 and 16 / 4 = 4 seen **M1**

10 cao **A1**

Answer: 10

Question 5

16 - 9 = 7 and 11 - 5 = 6 both evaluated **M1**

42 cao **A1**

Answer: 42

Question 6

35 cao **B1**

Answer: 35

Question 7

16 cao **B1**

Answer: 16

Question 8

36 cao **B1**

Answer: 36

Question 9

5 cao **B1**

Answer: 5

Question 10

3^2 = 9 seen, or 4 x 9 (= 36) seen **M1**

25 cao **A1**

Answer: 25

Question 11

40 cao **B1**

Answer: 40

Question 12

8 cao **B1**

Answer: 8

Question 13

27 cao **B1**

Answer: 27

Question 14

24 cao **B1**

Answer: 24

Question 15

3 cao **B1**

Answer: 3

Question 16

5 + 3 = 8 and 8^2 = 64 both evaluated **M1**

64 / 4 (= 16) seen **M1**

32 cao **A1**

Answer: 32

Question 17

4^2 = 16 and 15 - 16 = -1 both evaluated **M1**

2 x (-1) (= -2) seen **M1**

102 cao **A1**

Answer: 102

Question 18

2^3 = 8 and 40 / 5 = 8 both evaluated **M1**

5 x 8 (= 40) seen **M1**

32 cao **A1**

Answer: 32

Question 19

2 + 3 = 5 and 5^2 = 25 both evaluated **M1**

100 / 25 (= 4) seen **M1**

9 cao **A1**

Answer: 9

Question 20

3 - 8 = -5 evaluated, and 4 x (-5) (= -20) seen **M1**

2^3 = 8 seen **M1**

-12 cao **A1**

Answer: -12

Question 21

evaluate bracket and division: (15 - 7) = 8, 8 / 4 = 2 **M1**

4 cao **A1**

Answer: 4

Question 22

40 cao **B1**

Answer: 40

Question 23

evaluate $(6 - 2)^2$ or show (6 - 2) = 4 and 4^2 = 16 **M1**

21 cao **A1**

Answer: 21

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Question 24

evaluate denominator 2 + 1 = 3 and divide 12 by 3	**M1**
11 cao	**A1**

Answer: 11

Question 25

evaluate each bracket, (9 - 3) = 6 and (2 + 5) = 7	**M1**
42 cao	**A1**

Answer: 42

Question 26

17 cao	**B1**

Answer: 17

Question 27

evaluate $(9 - 4)^2$ or show (9 - 4) = 5 and $5^2 = 25$	**M1**
15 cao	**A1**

Answer: 15

Question 28

evaluate numerator 12 - 4 = 8	**M1**
evaluate denominator $2^2 = 4$ and divide 8 / 4 = 2	**M1**
5 cao	**A1**

Answer: 5

Question 29

evaluate $2^2 = 4$ and then 4 x 4 = 16 or show the multiplication	**M1**
19 cao	**A1**

Answer: 19

Question 30

evaluate $2^3 = 8$	**M1**
multiply 8 x 2 = 16 or show 2^3 x 2 = 16	**M1**
7 cao	**A1**

Answer: 7

Question 31

evaluate bracket 3 - 7 = -4 and multiply 5 x (-4) = -20	**M1**
-32 cao	**A1**

Answer: -32

Question 32

evaluate index $3^2 = 9$ and bracket 9 + 9 = 18	**M1**
divide 18 / 3 = 6	**M1**
5 cao	**A1**

Answer: 5

Question 33

evaluate bracket 12 + 4 = 16	**M1**
evaluate index $16^2 = 256$ and divide 256 / 8 = 32	**M1**
18 cao	**A1**

Answer: 18

Question 34

evaluate bracket 1 + 2 = 3	**M1**
do division before multiplication left to right: 6 / 2 = 3 then 3 x 3	**M1**
9 cao	**A1**

Answer: 9

Question 35

evaluate index $2^2 = 4$	**M1**
multiply 3 x 4 = 12	**M1**
evaluate 6 / 3 = 2	**M1**
-2 cao	**A1**

Answer: -2

Question 36

show Priya's method 7 + (2 x 3^2) and evaluate to 25	**M1**
show correct method (7 + 2) x 3^2 and evaluate to 81	**M1**
difference 56 cao	**A1**

Answer: Priya's answer 25; correct answer 81; difference 56

Question 37

evaluate $(7 - 2)^2 = 5^2 = 25$	**M1**
multiply 3 x 25 = 75 and evaluate 20 / 4 = 5	**M1**
70 cao	**A1**

Answer: 70

Question 38

evaluate bracket 12 - 4 = 8	**M1**
evaluate index $2^3 = 8$	**M1**
multiply 8 x 3 = 24	**M1**
24 cao	**A1**

Answer: 24

Question 39

evaluate $2^3 = 8$	**M1**
evaluate numerator 18 - 8 = 10	**M1**
evaluate denominator 4 - 2 = 2 and divide 10 / 2 = 5	**M1**
15 cso	**A1**

Answer: 15

Question 40

brackets placed around 4 + 6, giving (4 + 6) x 3 - 2	**M1**
evaluates to 28 cao: 10 x 3 = 30, 30 - 2 = 28	**A1**

Answer: (4 + 6) x 3 - 2 = 28

Question 41

evaluate $3^2 = 9$	**M1**
evaluate 9 - 1 = 8 and 2 + 8 = 10	**M1**
evaluate (5 - 3) = 2 and multiply 10 x 2 = 20	**M1**
28 cao	**A1**

Answer: 28

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