Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics

POWERS, ROOTS & BIDMAS

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:	

1.

(a) Work out $4 \times 3 + 2$

$4 \times 3 = 12$

$12 + 2 = 14$

14

(1)

(b) Work out $20 - 12 \div 4$

$-12 \div 4 = -3$

$20 - 3 = 17$

17

(1)

(c) Work out $(18 \div 3) + (20 \div 5)$

$18 \div 3 = 6$

$20 \div 5 = 4$

$6 + 4 = 10$

10

(1)

(d) Work out $(3 + 5)^2$

$3 + 5 = 8$

$8^2 = 64$

64

(1)

(4 marks)

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2. Work out

(i) $3 \times 3 - 5$

$3 \times 3 = 9$

$9 - 5 = 4$

4

(ii) $20 \div (12 - 2)$

$12 - 2 = 10$

$20 \div 10 = 2$

2

(iii) $7 + 8 \div 4$

$8 \div 4 = 2$

$7 + 2 = 9$

9

(3 marks)

3. Beth says $20 - 5 \times 3$ is 45
Pat says $20 - 5 \times 3$ is 5

(a) Who is right?
Give a reason for your answer.

Pat is right as he's using bidmas

$20 - 5 \times 3$
$-5 \times 3 = -15$
$20 - 15 = 5$

Pat ..... is right

(2)

(b) Work out $(12 + 9) \div 3$

$12 + 9 = 21$
$21 \div 3 = 7$

7

(1)

(3 marks)

4.

(a) Work out the value of

(i) the square of 6

$6^2 = 6 \times 6 = 36$

36

(ii) $2^4 = 2 \times 2 \times 2 \times 2$
$= 16$

16

(2)

(b) Work out the value of

(i) $-10 \div 5$

−

(ii) -3×-4

$- \times - = +$

12

(2)

(4 marks)

(a)

5. Work out $2 \times (11 + 9)$

$11 + 9 = 20$

$2 \times 20 = 40$

40

(1)

(b) Work out $3 \times 5 + 4$

$3 \times 5 = 15$

$15 + 4 = 19$

19

(1)

(c) Work out $20 - 5 \times 3$

$-5 \times 3 = -15$

$20 - 15 = 5$

5

(1)

(3 marks)

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6. (a) Work out the value of $(4 + 5) \times 2 + 3$

$4 + 5 = 9$

$9 \times 2 = 18$

$18 + 3 = 21$

21

(1)

(b) Add brackets ( ) to make each statement correct.
You may use more than one pair of brackets in each statement.

(i) $4 + 5 \times (2 + 3) = 29$

(ii) $(4 + 5) \times (2 + 3) = 45$

(2)

(3 marks)

(a)

7. Work out the value of $(2 + 3) \times 4 + 5$

2 + 3 = 5

5 x 4 = 20

20 + 5 = 25

25 .....

(1)

(b) Add brackets ( ) to make each statement correct.
You may use more than one pair of brackets in each statement.

(i) (2 + 3) × 4 + 5 = 25

(ii) (2 + 3) × (4 + 5) = 45

(2)

(3 marks)

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8. Work out

(i) $2 \times 3 + 4$

2 x 3 = 6

6 + 4 = 10

10 .....

(ii) $3 + 5 \times 2$

5 x 2 = 10

3 + 10 = 13

13 .....

(iii) $16 \div (2 \times 4)$

2 x 4 = 8

16 ÷ 8 = 2

2 .....

(3 marks)

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9. (a) Work out $\dfrac{(-8 \times -3)}{-6}$

$-8 \times -3 = 24$

$24 \div -6 = -4$

-4 **(1)**

(b) Work out

$33 \times 10 - 6 \times 5$

$33 \times 10 = 330$

$-6 \times 5 = -30$

$330 - 30 = 300$

300 **(2)**

(c) Work out

$6 + 2 \times (5 - 1)$

$5 - 1 = 4$

$2 \times 4 = 8$

$8 + 6 = 14$

14 **(2)**

(5 marks)

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10. Frankie says that $15 - 3 \times 2 = 24$

Frankie is wrong.
Explain why.

$-3 \times 2 = -6$, $15 - 6 = 9$
Frankie wasn't using BIDMAS;
Frankie should get lessons from
Bishops Online Tutoring

(3 marks)

(a)

11. Work out $4 \times 5 - 8$

$4 \times 5 = 20$

$20 - 8 = 12$

12

(1)

(b) Work out $18 + 2 \times 3$

$2 \times 3 = 6$

$18 + 6 = 24$

24

(1)

(c) Work out $7 + 3 \times 5$

$3 \times 5 = 15$

$15 + 7 = 22$

22

(1)

(d) Work out $13 - 3 \times 4 + 2$

$-3 \times 4 = -12$

$13 - 12 = 1$

$1 + 2 = 3$

3

(1)

(e) Work out $(4 + 3) \times 7$

$4 + 3 = 7$

$7 \times 7 = 49$

49

(1)

(e) Work out $20 - (4 + 10)$

$4 + 10 = 14$

$20 - 14 = 6$

6

(1)

(6 marks)

12. (a) Write down the value of $\sqrt{81}$

$9 \times 9 = 81$

$\therefore \sqrt{81} = 9$

9

.....

(1)

(b) Work out the value of $5^2 + 2^3$

$5^2 = 25$

$2^3 = 8$

$25 + 8 = 33$

33

.....

(2)

(3 marks)

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13. (a) Work out the value of $(9 + 2) \times 6 - 3$

$9 + 2 = 11$

$11 \times 6 = 66$

$66 - 3 = 63$

63

.....

(1)

(b) Add brackets ( ) to make each statement correct.
You may use more than one pair of brackets in each statement.

(i) $9 + (2 \times 6) - 3 = 18$

(ii) $9 + 2 \times (6 - 3) = 15$

(2)

(3 marks)
