

## Grade 7 | Mental Maths | Term 3

### Question 1

- a)  $1\ 252 + 1\ 525 = \dots\dots\dots$
- b)  $25 \times 6 = \dots\dots\dots$
- c) 60% of 80 =  $\dots\dots\dots$
- d)  $4,2 \div 7 = \dots\dots\dots$
- e)  $5 + 5 \times 5 = \dots\dots\dots$
- f)  $5\ 000 - 3\ 250 = \dots\dots\dots$
- g)  $2^5 = \dots\dots\dots$
- h)  $900 \div 8 = \dots\dots\dots$

Total \_\_\_ /8

### Question 2

Complete each number pattern.

- a)  $\frac{1}{8}$  ;  $\frac{1}{4}$  ;  $\frac{1}{2}$  ;  $\dots\dots$  ;  $\dots\dots$  ;  $\dots\dots$
- b) 1 ; 1 ; 2 ; 3 ;  $\dots\dots$  ;  $\dots\dots$  ;  $\dots\dots$
- c) 0,2 ; 0,3 ; 0,6 ; 1,1 ;  $\dots\dots$  ;  $\dots\dots$
- d) 3 ; 12 ; 48 ;  $\dots\dots$  ;  $\dots\dots$
- e) 169 ;  $\dots\dots$  ; 121 ; 100 ; 81 ;  $\dots\dots$
- f) 300 ; 285 ; 270 ;  $\dots\dots$  ;  $\dots\dots$
- g) 1 ; 2 ; 3 ; 4 ; 5 ; 6 ;  $\dots\dots$  ;  $\dots\dots$

Total \_\_\_ /7

### Question 3

Consider the number sequence:

4 ; 8 ; 12 ; 16...

- a) 5<sup>th</sup> term =  $\dots\dots\dots$
- b)  $n^{\text{th}}$  term =  $\dots\dots\dots$
- c) 20<sup>th</sup> term =  $\dots\dots\dots$

Consider the number sequence:

3 ; 5 ; 7 ; 9...

- a) 5<sup>th</sup> term =  $\dots\dots\dots$
- b)  $n^{\text{th}}$  term =  $\dots\dots\dots$
- c) 15<sup>th</sup> term =  $\dots\dots\dots$

Total \_\_\_ /6

### Question 4

- a)  $5 \times 6 \times 7 = \dots\dots\dots$
- b)  $\frac{3}{8} \times \frac{7}{12} = \dots\dots\dots$
- c)  $4 \div 6 = \dots\dots\dots$  in decimal form.
- d)  $20 - 2 \times 3 + 3^2 = \dots\dots\dots$
- e)  $8^5 \div 8^3 = \dots\dots\dots$
- f)  $1,02 \div 3 = \dots\dots\dots$
- g)  $12 \times 10^4 = \dots\dots\dots$
- h)  $\dots\dots\dots\%$  of R90 = R18

Total \_\_\_ /8

**Question 5**

Write in short form:

- a)  $a \times 12 = \dots\dots\dots$
- b)  $x \times x = \dots\dots\dots$
- c)  $p - 2 \times q = \dots\dots\dots$
- d)  $5 \times y \times y + y = \dots\dots\dots$
- e)  $b + a \div b = \dots\dots\dots$
- f)  $2 \times 2 \times t \times t \times t = \dots\dots\dots$
- g)  $(y \times 3) \div x = \dots\dots\dots$

Total \_\_\_ /7

**Question 7**

- a) If  $x = 2$  then  $3x = \dots\dots\dots$
- b) If  $x = 3$  then  $x^2 = \dots\dots\dots$
- c) If  $y = 0,8$  then  $2y = \dots\dots\dots$
- d) If  $y = 12$  then  $\frac{y}{3} = \dots\dots\dots$
- e) If  $a = 4$  then  $a^3 = \dots\dots\dots$
- f) If  $a = 0,3$  then  $\frac{1}{2}a = \dots\dots\dots$
- g) If  $t = 3$  then  $t^4 = \dots\dots\dots$
- h) If  $t = \frac{2}{3}$  then  $6t = \dots\dots\dots$

Total \_\_\_ /8

**Question 6**

Write in expanded form:

- a)  $10y^2 = \dots\dots\dots$
- b)  $abc = \dots\dots\dots$
- c)  $x^2 + 2x = \dots\dots\dots$
- d)  $3xy^3 = \dots\dots\dots$
- e)  $z^5 = \dots\dots\dots$
- f)  $100k = \dots\dots\dots$
- g)  $p^2qr^3 = \dots\dots\dots$

Total \_\_\_ /7

**Question 8****Consider:**  $y = 3x + 2$ 

- a) If  $x = 5$  then  
 $y = \dots\dots\dots$
- b) If  $x = \frac{1}{2}$  then  
 $y = \dots\dots\dots$
- c) If  $x = 0,8$  then  
 $y = \dots\dots\dots$

**Consider:**  $b = \frac{1}{2} \times a^2$ 

- a) If  $a = 2$ ,  
 $b = \dots\dots\dots$
- b) If  $a = 5$ ,  
 $b = \dots\dots\dots$
- c) If  $a = 20$ ,  
 $b = \dots\dots\dots$

Total \_\_\_ /6

### Question 9

Solve each equation for  $x$ .

- a)  $2 + x = 5$  .....
- b)  $4x = 52$  .....
- c)  $2x + 3 = 15$  .....
- d)  $x - 3 = 99$  .....
- e)  $\frac{x}{3} = 6$  .....
- f)  $5x - 2 = 38$  .....
- g)  $\frac{x}{4} + 12 = 24$  .....

Total \_\_\_ /7

### Question 10

- a) A shape's area is  $6\text{cm}^2$ .  
It is enlarged by a scale factor of 2.  
The area of the enlarged shape  
= .....
- b) A shape's perimeter is 50m.  
It is reduced by a scale factor of 4.  
The perimeter of the reduced shape  
= .....
- c) A shape's area is  $25,89\text{cm}^2$ .  
It is enlarged by a scale factor of  $k$ .  
The area of the enlarged shape  
= .....

Total \_\_\_ /3

### Question 11

Complete:

- a) A rectangular prism has  
..... vertices, ..... faces  
and ..... edges.
- b) A triangular prism has  
..... faces, ..... edges  
and ..... vertices.
- c) A square based pyramid has  
..... vertices, ..... edges  
and ..... faces.
- d) A pentagonal-based  
pyramid has ..... faces,  
..... vertices and ..... edges.

Total \_\_\_ /12

### Question 12

Complete each number pattern.

- a) 2 ; 2 ; 4 ; 6 ; 10 ; ..... ; ..... ; .....
- b) 81, 27, ..... ; ..... ; 1 ;  $\frac{1}{3}$  ; .....
- c) 0,2 ; 0,6 ; 1,8 ; ..... ; .....
- d) 1 ; 8 ; 27 ; ..... ; ..... ; 216.
- e) 1 ; 3 ; 4 ; 6 ; 9 ; 9 ; 16 ; ..... ; ..... ; .....
- f)  $\frac{1}{8}$  ;  $\frac{1}{4}$  ;  $\frac{3}{8}$  ; ..... ; ..... ; .....
- g) 0,15 ; 0,45 ; 1,35 ; ..... ; .....

Total \_\_\_ /7

### Question 13

Consider the number sequence:

1 ; 4 ; 9 ; 16 ...

- a) 5<sup>th</sup> term = .....
- b)  $n^{\text{th}}$  term = .....
- c) 13<sup>th</sup> term = .....

Consider the number sequence:

2 ; 9 ; 28 ; 65 ...

- a)  $n^{\text{th}}$  term = .....
- b) 5<sup>th</sup> term = .....
- c) 10<sup>th</sup> term = .....

Total \_\_\_ /6

### Question 14

Write in short form:

- a)  $y \div x =$  .....
- b)  $x \times y + y \times y =$  .....
- c)  $6 \times a - b \times 6 =$  .....

Write in expanded form:

- a)  $55xyz =$  .....
- b)  $\frac{p}{q} + \frac{q}{p} =$  .....
- c)  $15x^5y =$  .....

Total \_\_\_ /6

### Question 15

Solve each equation for  $y$ .

- a)  $y + 49 = 82$  .....
- b)  $25y = 100$  .....
- c)  $\frac{y}{12} = 60$  .....
- d)  $100 - y = 15$  .....
- e)  $6y + 3 = 51$  .....
- f)  $12y - 9 = 87$  .....
- g)  $\frac{y}{8} - 0,025 = 0,6$  .....

Total \_\_\_ /7

### Question 16

True or False?

If false, give the correct answer

- a)  $9^3 = 27$  .....
- b)  $4 + 4 \div 4 = 5$  .....
- c)  $0,8 \times 0,8 = 0,88$  .....
- d)  $\frac{1}{3} = 0,13$  .....
- e) If  $x = 0,5$  then  $x^2 = 0,25$ . .....
- f)  $3 \times 3 \times x \times x = 33x^2$  .....
- g)  $a = 2$  and  $b = 5$   
then  $ab = 25$ . .....

Total \_\_\_ /7

### Question 17

Write an algebraic expression for each of the following.

- a) The sum a certain number and 5.  
.....
- b) Half a certain number is subtracted from 12.  
.....
- c) Triple a certain number is added to 7.  
.....
- d) One third of a number is increased by 1.  
.....
- e) A number squared is subtracted from half of 30.  
.....

Total \_\_\_ /5

### Question 18

Write an algebraic equation for each of the following.  
*Solve each equation.*

- a) The sum a certain number and 18 is 30.  
.....  
.....
- b) One third of a certain number is added to  $4^3$ .  
The sum is seventy.  
.....  
.....
- c) The product of  $x$  and 7 is added to 45. The sum is eighty.  
.....  
.....

Total \_\_\_ /6

### Question 19

- 1. A shape's area is  $80m^2$ .  
It is reduced by a scale factor of 4.  
The area of the reduced shape  
= .....
- 2. A square has a length of  $y$ .  
What is its:
  - i) perimeter? .....
  - ii) area? .....
- 3. A rectangle has a length of  $a$  and a breadth of  $b$ .  
What is its:
  - i) area? .....
  - ii) perimeter? .....

Total \_\_\_ /5

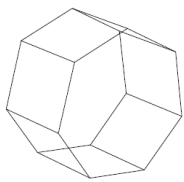
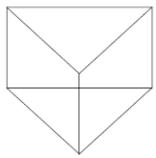
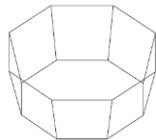
### Question 20

- 1. In the expression  $2x + y$ ,
  - a) How many terms are there? .....
  - b) How many variables are there? .....
  - c) What is the coefficient of  $x$ ? .....
  - d) What is the coefficient of  $y$ ? .....
  - e) What is the constant? .....
- 2. In the expression  $x^2 + 3x + 5$ ,
  - a) How many terms are there? .....
  - b) How many variables are there? .....
  - c) What is the constant? .....
  - d) What is the coefficient of  $x$ ? .....
  - e) What is the coefficient of  $x^2$ ? .....

Total \_\_\_ /10

## Question 21

Complete the table below.

3-D Shape	No. Faces	No. Vertices	No. Edges
			
			
			

Total \_\_\_ /9

## Question 23

Solve each equation for  $x$ .

a)  $x + 40 + 5 = 55$  .....

b)  $15x = 300$  .....

c)  $10x = 6$  .....

d)  $2x + 40 = 100$  .....

e)  $3x - 5 = 13$  .....

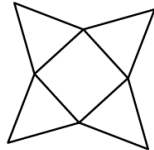
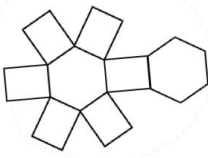
f)  $0,5x + 4 + 4 = 15$   
.....

g)  $x^3 = 125$  .....

Total \_\_\_ /7

## Question 22

Complete the table below.

Net	3-D Object's Name	Pyramid or Prism?
		
		
	Cube	

Total \_\_\_ /6

## Question 24

Underline the correct solution for each equation.

a)  $3x - 4 = x$        $x = 1, 2, 3$

b)  $2x + 1 = x + 4$        $x = 1, 2, 3$

c)  $13 - 2x = 3$        $x = 4, 5, 7$

d)  $0,5x + 1 = x$        $x = 0, 2, 8$

e)  $x^2 + 1 = 26$        $x = 3, 4, 5$

f)  $x^2 - 2x = 3$        $x = 0, 1, 3$

g)  $9 - x^3 = 9$        $x = 0, 10, 100$

Total \_\_\_ /7

**Question 25**

- a)  $10,9 \times 2 =$  .....
- b)  $9,2 - 2,5 =$  .....
- c)  $1,8 + 0,1 =$  .....
- d)  $8,5 \times 0,2 =$  .....
- e)  $4,4 - 0,2 =$  .....
- f)  $1,4 + 1,7 =$  .....
- g)  $3,7 - 0 =$  .....
- h)  $10 \times 0,4 =$  .....

Total \_\_\_\_ /8

**Question 27**

- a)  $1 \div 4 =$  .....
- b)  $5 \times 9 =$  .....
- c)  $5 \div 10 =$  .....
- d)  $14 + 76 =$  .....
- e)  $98 + 70 =$  .....
- f)  $67 - 9 =$  .....
- g)  $7 \times 5 =$  .....
- h)  $60 + 64 =$  .....

Total \_\_\_\_ /8

**Question 26**

- a)  $10 \div 1000 =$  .....
- b)  $7,8 - 0,6 =$  .....
- c)  $9,3 + 11 =$  .....
- d)  $10,5 \times 4 =$  .....
- e)  $3,2 \times 1 =$  .....
- f)  $6 + 4,2 =$  .....
- g)  $9,0 \div 10 =$  .....
- h)  $1,1 \times 3 =$  .....

Total \_\_\_\_ /8

**Question 28**

- a)  $4 \div 0 =$  .....
- b)  $7 \times 0 =$  .....
- c)  $15 + 100 =$  .....
- d)  $16 + 67 =$  .....
- e)  $41 + 34 =$  .....
- f)  $53 - 16 =$  .....
- g)  $8 \div 2 =$  .....
- h)  $7 \times 9 =$  .....

Total \_\_\_\_ /8

**Question 29**

Fill in the missing values in each table.

Position	1	2	3	4	n
Value	8	16	24		
Position	1	2	3	4	n
Value	5	7	9		
Position	1	2	3	4	n
Value	1	4	9		

Total \_\_\_ /6

**Question 31**

- a)  $2^4 =$  .....
- b)  $3^3 =$  .....
- c)  $9^2 =$  .....
- d)  $5^4 =$  .....
- e)  $4^4 =$  .....
- f)  $6^3 =$  .....
- g)  $8^2 =$  .....
- h)  $7^3 =$  .....
- i)  $100^2 =$  .....

Total \_\_\_ /9

**Question 30**

Determine the value of the 5<sup>th</sup> and n<sup>th</sup> term in each number sequence.

a) 2; 5; 8; 11; ...

5<sup>th</sup> term = ..... n<sup>th</sup> term = .....

b) 1; 8; 27; 64; ...

5<sup>th</sup> term = ..... n<sup>th</sup> term = .....

c) 6; 6<sup>2</sup>; 6<sup>3</sup>; 6<sup>4</sup>; ...

5<sup>th</sup> term = ..... n<sup>th</sup> term = .....

Total \_\_\_ /6

**Question 32**

- a)  $48 \times 2 =$  .....
- b)  $1000 - 729 =$  .....
- c)  $80 - 12 =$  .....
- d)  $768 \div 4 =$  .....
- e)  $81 \times 3 =$  .....
- f)  $400 \div 2 =$  .....
- g)  $8 \times 4 + 10 =$  .....
- h)  $38 - 7 =$  .....
- i)  $2 \times 17 - 10 =$  .....

Total \_\_\_ /9