#  CHECKPOINT MATHS, MOD 1

## Put a ring around **all** the numbers that are exactly divisible by 9

**3 56 72 93 146 198**

[1]

1. Jamie has 60 counters.

He gives

1 of his counters to Sam and

3

1 to Sally.

4

How many counters does Jamie have left?



**3** Erik makes a sequence of patterns using tiles.

He records how many tiles are used for each pattern number.

[2]

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pattern number (*p*) | 1 | 2 | 3 | 4 | 5 |  |  |
| Number of tiles (*t*) | 1 | 8 | 15 | 22 |  |  | 50 |

## Complete the table. [2]

1. Erik finds a rule connecting the pattern number and the number of tiles. Put a ring around the correct rule.

*t* = *p +* 7 *t* = 6*p* – 1 *t* = 7*p* + 1 *t* = 7*p* – 6 [1]

**4** Write down the value of 196



**5 (a)** Work out the value of *a.*

[1]

*a*°

NOT TO SCALE

62°

 49°

*a* = ° [1]



**(b)** Give a geometric reason for your answer.



[1]



**6** Work out the temperature after each of these changes.

**(a)** The temperature starts at 6 °C and it falls by 13 °C. °C [1]



**(b)** The temperature starts at −2 °C and it falls by 8 °C. °C [1]



**7** Martin is playing a game.

The probability of winning is 0.3

What is the probability of **not** winning?

[1]



**8** Three students took a test.

The test was out of 50 marks.

David scored

38 marks

John scored half marks

Susan scored

72%

Who scored the highest?

Show your working.

................. scored the highest

[2]

**9** Match each calculation with its answer.

|  |  |
| --- | --- |
| 0.7 × 1000 | 7 |
|  | 70 |
| 70 × 0.1 | 700 |
|  | 7000 |
| 700 ÷ 0.01 | 70 000 |

[1]

**10** This table shows some outcomes from the function *x* → 2*x* + 3

|  |  |
| --- | --- |
| input | output |
| 1 | 5 |
| 6 |  |
| 9 |  |
| 15 | 33 |

Complete the output column of the table.

[1]

**11** Look at the following equation.

**45.6 ÷ 1.2 = 38**

Use this information to **write down** the answers to the following.

**(a)** 456 ÷ 12 = [1] **(b)** 38 × 1.2 = [1] **(c)** 3.8 × 1.2 = [1]

**12** A cuboid has dimensions 2 cm × 3 cm × 5 cm.

Part of the net of this cuboid is shown on the centimetre square grid. Complete the net of the cuboid.

[1]

**13** The travel graph shows Karen’s journey between two towns, Springton and Watworth.

200

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150

Distance travelled

(km)

100

50

0

09 00

10 00 11 00 12 00

Time

13 00 14 00

George makes the same journey between Springton and Watworth.

He leaves Springton at 10 00 and travels at a constant speed of 80 km/h without stopping.

**(a)** Draw a line on the travel graph to represent George’s journey. [1]

**(b)** How much earlier than Karen did George arrive at Watworth?

[1]



**14** Write these numbers in order of size starting with the **smallest**.

25 32 3 64 0.22



smallest largest [1]

**15** Work out

**(a)** 1.56 × 3.6



**(b)** 5.44 ÷ 1.6

[2]

[2]



**16** Ayako and Joshua have a total of 59 sweets between them.

Ayako has *n* sweets.

Joshua has 3 fewer sweets than Ayako. Work out the value of *n*.

*n* = [2]

**17** The map shows the positions of two beaches, *A* and *B*.

N N

sea

*B*

*A*

land

A boat is on a bearing of 062° from beach *A* and on a bearing of 286° from beach *B*.

Mark the position of the boat clearly on the map. [2]

**18** Decide whether each of these statements is true or false.

Tick (9) the correct boxes.

90 = 0

93 × 92 = 95

True False

98 ÷ 94 = 92 [1]

**19** Calculate

**(a)**

2 2 – 1 3

3 4

[2]



**(b)**

1 1 × 2 2

3 5

[2]



**20** The map shows an island with two towns, *P* and *Q*.

The scale of the map is 1 cm : 4 km.

*Q*

*P*

Scale 1 cm : 4 km

The fire department wants to build a new fire station on the island. The fire station should be

• no more than 20 km from town *P*

• no more than 32 km from town *Q*.

Shade the region on the island where the fire station could be built. [2]

**21** Work out

**(a)** 5 + 2 × 7

[1]



**(b)** 4 × (1 + 32)

[1]



**22** Here is a number line.

–4 –3 –2 –1 0 1 2 3 4 5 6

Tick (3) which of these inequalities is shown on the number line.

–2 ≤ *n* ≤ 5

–2 < *n* ≤ 5

–2 ≤ *n* < 5

5 ≥ *n* < –2 [1]

**23** The stem and leaf diagram shows the heights, in cm, of the 15 students in class **8A** and the 15 students in class **8B**.

**Class 8A Class 8B**

8 3 1 14 6

7 7 7 5 15 0 2 7

9 9 8 6 4 16 1 1 3 5 8

3 1 0 17 0 4 6 6 6

18 2

Key: 14 **|** 6 = 146 cm

1**|** 14 = 141 cm

**(a)** Find the range of heights of the students in class **8A**.



**(b)** Find the median of the heights of the students in class **8B**.

cm [1]

cm [1]



**(c)** Give **two** statements to compare the heights of the students in the two classes.





[2]



**24** Ahmed buys a pack of 20 drinks to sell at the school shop.

The pack costs $5.

He wants to make a 40% profit.

How much should he sell each drink for?

$ [3]

