Multiple-choice section – choose the correct answer

Question 1 [1.1]

7 – 10 =

A 10 B -10 C -3 D 3

Question 2 [1.1]

-4 – 12 =

A -8 B 8 C 16 D -16

Question 3 [1.2]

2 × -5 =

A 10 B -10 C -3 D -7

Question 4 [1.5]

(-3)2 =

A 9 B -9 C -6 D 6

Question 5 [1.3]



A -5 B 5 C -50 D 400

Question 6 [1.4]

-1 + (2 × -2) + 2 =

A -5 B 5 C -3 D 3

Question 7 [1.4]



A -1 B 16 C -8 D 8

Question 8 [1.5]

(-3)2 + 22 =

A -7 B -5 C 13 D -2

Question 9 [1.6]

40 + 80 =

A 1 B 2 C 12 D 120

Question 10 [1.4]

A farmer has three children. Each child has three cats. Each cat has three kittens and each kitten kills three mice. The incorrect number of mice killed is:

A 34 B 81 C 32 × 32 D 3 + 3 + 3 + 3

Multiple-choice results: \_\_\_ / 10

Short answer section

Question 11 2 marks [1.1]

Write a negative or positive integer to describe the following situations.

(a) Losing 9 marbles in a game. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Diving to a depth of 4 m. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 12 1 mark [1.1]

Arrange the following numbers in order from largest to smallest.

4, -1, 0, -3, 2

Question 13 5 marks [1.4]

Evaluate:

(a) -2 + (-4) + (-1)

(b) -5 × -4

(c) 22 – (4)2 + (-1)2

(d) 21 ÷ -7

Question 14 4 marks [1.1]

The minimum temperatures recorded at Mt Hotham one week were:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Day | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| Temperature | 4 °C | -1 °C | -2 °C | 5 °C | -3 °C | 2 °C | 0 °C |

(a) Which day had the lowest minimum temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Which day recorded the highest minimum temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) Between which two days did the biggest change in temperature occur and what was it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 15 2 marks [1.2]

A sports store is selling hockey sticks at below ‘cost price’ (the price that the store bought them for). The hockey sticks were bought for $90 and sold for $60 in the sale.

Find the loss made when 4 hockey sticks are sold in the sale.

Question 16 2 marks [1.2]

A six-sided die has the letters A, B, C, D, E and F on its faces. A is worth 2 points, B is worth -3 points, C is worth 4 points, D is worth -6 points, E is worth 3 points and F is worth -1 point. Find the total score for the following rolls: B, E, E, E.

Question 17 2 marks [1.3]

A group of 3 people loses $1530 buying tickets in a lottery. Write each person’s share of the loss as an integer.

Question 18 2 marks [1.3]

A company made a loss for the year of $2 040 000. Write the amount that the company lost each month as a directed number.

Question 19 2 marks [1.3]

The temperature inside a freezer fell from 8 °C at 6 pm to -2 °C at 4 am. Find the average change in temperature per hour by dividing the overall temperature change by the number of hours.

Question 20 4 marks [1.4]

Evaluate the following.

(a) (10 – 4) × (-4 + 3) (b) -3 × -4 – (-15 ÷ -5) + (-6)

Question 21 3 marks [1.4]

A company made a loss of $6 million per month for 5 months and then made a profit of $4 million per month for 7 months. What was the company’s final result at the end of that year?

Question 22 4 marks [1.5]

Evaluate the following.

(a) (-3)2 × (2)3 (b) (23 × 34) ÷ (22 × 33)

Question 23 4 marks [1.5]

Evaluate the following:

(a)  (b) 

Question 24 2 marks [1.6]

Evaluate the following.

(a) 80

(b) (33)2

Question 25 2 marks [1.6]

The prime factors for the number 12 are 22 × 3 because 12 = 2 × 2 × 3. Write the prime factors for 24 in index form.

Short answer results: \_\_\_ / 41

Extended answer section

Question 26 9 marks [1.4]

The game of Reverso is played using two-sided counters. The counters may be either black (negative) or white (positive). So the collection below shows -1.

🔾 🔾 ● ● ●

(a) Explain in words why the line of counters above shows -1.

(b) Draw a line of counters to show each of these:

(i) -2

(ii) -2 + +1 (and write what directed number this shows)

(c) In order to subtract +3 from -2, you simply turn over 3 white counters, making them black, and add in 2 more black counters. This makes a total of 5 black counters or -5.   
Draw and name the counters that are left if you take away -2 from -1.

(d) Draw a line of counters to show this subtraction: +1 – -2.

(e) Multiplication with Reverso is easy. For example, +3 × +2 is shown by three groups of 2 white counters. If the number being multiplied is negative, you also flip over the counters, so that   
+3 × -2 looks like this:  
● ● ● + ● ● ● → -6  
Draw the solution to -2 × -2 and say what directed number it shows.

Extended answer results: \_\_\_ / 9

TOTAL test results: \_\_\_ / 60