­Multiple-choice section – choose the correct answer

Question 1 [1.1]

6 – 9 =

A 54 B -54 C 3 D -3

Question 2 [1.1]

-5 – 11 =

A - 8 B 8 C -16 D 16

Question 3 [1.2]

3 × -4 =

A -12 B 12 C -1 D -7

Question 4 [1.5]

(-5)2 =

A 10 B -25 C -10 D 25

Question 5 [1.3]



A -4 B -36 C 4 D 36

Question 6 [1.4]

-1 + (3 × -3) +2 =

A 10 B -8 C 1 D 8

Question 7 [1.4]



A -21 B 9 C 19 D 13

Question 8 [1.4]

(-4)2 + 22 =

A -12 B -20 C 20 D -2

Question 9 [1.6]

50 + 70 =

A 2 B 1 C 12 D 120

Question 10 [1.4]

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

A 24 B 16 C 2 + 2 + 2 + 2 D 22 × 22

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 4 marbles in a game. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Diving to a depth of 6 m. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 12 1 mark [1.1]

Arrange the following numbers in order from smallest to largest.

5, -2, -5, 1, 0

Question 13 5 marks [1.4]

Evaluate:

(a) -3 + (-5) + (-1)

(b) -6 × -3

(c) 32 – 22 + (-5)2

(d) 28 ÷ -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 | 5 °C | -2 °C | -3 °C | 0 °C | 2 °C | 1 °C | -1 °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 $80 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, F.

Question 17 2 marks [1.3]

A group of 3 people loses $1230 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 $1 680 000. 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 9 °C at 6 pm to -3 °C at midnight. 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) (12 – 4) × (-2 + 3) (b) -5 × -2 – (-12 ÷ -4) + (-6)

Question 21 3 marks [1.4]

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

Question 22 4 marks [1.5]

Evaluate the following.

(a) (-4)2 × (1)3

(b) (33 × 24) ÷ (22 × 33)

Question 23 4 marks [1.5]

Evaluate the following.

(a) 

(b) 

Question 24 2 marks [1.6]

Evaluate the following.

(a) 60

(b) (23)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 48 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) -3

(ii) -3 + +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