Multiple-choice section

Question 1 [1.1]

Which of the following has the same value as 16 × 2?

A 10 × 3 + 2 B 10 × 6 + 2 C 10 × 2 + 6 D 10 × 2 + 6 × 2

Question 2 [1.2]

Another way of writing 103 is:

A  B 10 × 10 × 10 C 10 × 3 D 103

Question 3 [1.2]

Five cubed is equal to:

A 5 × 5 B 15 C 125 D 35

Question 4 [1.3]

A group of Year 7 students run a car wash to raise $2000 for a local charity. If they get $20 for  
each car, how many cars will they need to wash to reach their fundraising goal?

A 40 B 10 C 4000 D 100

Question 5 [1.3]

20 × 50 =

A 10 B 100 C 700 D 1000

Question 6 [1.4]

Jack plans to buy a shirt for $43, a tie for $18 and trousers for $73. If he rounds each price to the nearest $10 and then finds the total estimated cost. His estimate will be:

A $110 B $120 C $130 D $140

Question 7 [1.4]

The answer to 416 ÷ 9 would be closest to:

A 10 B 20 C 30 D 40

Question 8 [1.5]

20 – 7 – 3 × 2 =

A 20 B 19 C 32 D 7

Question 9 [1.5]

The correct answer to 10 – 62 ÷ (2 + 2) is:

A 4 B 1 C 7 D 16

Question 10 [1.6]

Toni received $40 for Christmas, her older brother Jack received double that amount and her younger brother Tom received half of Toni’s amount. How much more did Jack get than Peter?

A $60 B $40 C $10 D $20

Multiple-choice total marks: \_\_\_\_ / 10

Short answer section

Question 11 4 marks [1.1, 1.2]

Use words from the list below to complete the following sentences.

*product quotient index base square estimate cube indices*

(a) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the result of a division calculation.

(b) 27 is a perfect \_\_\_\_\_\_\_\_\_\_.

(c) 3 × 3 × 3 × 3 can be written in \_\_\_\_\_\_\_\_\_\_ form as 34 and 3 is called the \_\_\_\_\_\_.

Question 12 4 marks [1.1, 1.2]

Write down 63 in expanded form, and then find its value without using a calculator. Make clear the strategies you are using by showing all your working.

Question 13 2 marks [1.1]

Calculate the following: 2 × 28 × 5

Question 14 3 marks [1.3]

Below is Jonathon’s working for a calculation from his maths test. He was asked to find the answer to  
17 × 4 but he made a mistake.

(a) Circle the line of working where the error appears.

(b) Write the correct working for the question in the space next to Jonathon’s working.

Jonathon’s working Correct working

17 × 4

= 1 × 4 + 7 × 4

= 4 + 28

= 32

(c) Briefly explain where Jonathon went wrong in the calculation.

Question 15 3 marks [1.1]

Show how to use the “make easy numbers” strategy to find 38 + 53 + 22 by filling the gaps in the working below:

38 + 53 + 22

= 38 + \_\_\_\_\_\_+ 53

= \_\_\_\_\_\_\_\_ + 53

= \_\_\_\_\_\_\_\_\_

Question 16 2 marks [1.1]

Show how to use the distributive law strategy to find 41 × 3 by filling the gaps in the working below:

41 × 3

= (\_\_\_\_\_\_\_+ 1) × 3

= \_\_\_\_\_\_\_ × 3 + 1 × 3

= \_\_\_\_\_\_\_\_ + 3

= \_\_\_\_\_\_\_\_\_

Question 17 3 marks [1.2, 1.3]

Write 2003 in expanded form and then calculate the answer using a suitable strategy for multiplying by multiples of ten.

Question 18 1 mark [1.2]

Write 7 × 7 × 7× 7 × 7 × 7 in index form.

Question 19 1 mark [1.2]

Evaluate .

Question 20 3 marks [1.1, 1.3]

Show how to calculate 51 × 6 using firstly the ‘work in stages’ strategy, and secondly the distributive law strategy by filling in the gaps in this working:

51 × 6

= 51 × \_\_\_\_\_\_\_ × 3

= \_\_\_\_\_\_ × 3

= 3 × (100 + \_\_\_\_\_\_\_\_)

= 3 × \_\_\_\_\_\_\_\_ + 3 × \_\_\_\_\_\_\_\_

= \_\_\_\_\_\_\_\_

Question 21 1 mark [1.4]

Round 8425 to the first digit.

Question 22 2 marks [1.4]

Estimate 32 × 41 by rounding to the first digit.

Question 23 2 marks [1.5]

Evaluate 25 + 20 ÷ 5

Question 24 2 marks [1.5]

Insert brackets to make 9 ÷ 3 + 6 × 4 = 4 into a true statement.

Short answer total:\_\_\_\_\_\_\_\_\_/33

Extended answer section

Question 25 6 marks [1.1, 1.3, 1.6]

Ravi plans to buy 3 pairs of shorts at $24 each, 3 shirts priced at $71 each and 11 ties at $13 each. Using appropriate strategies, calculate the amount Ravi will spend altogether.

Question 26 5 marks [1.2, 1.3, 1.4]

There are 262 × 103 possible car registration plates available with 2 letters followed by 3 digits.

(a) Estimate how many such registration plates are available.

(b) Do you expect that your estimate an over estimate or an underestimate? Explain why you think this.

(c) Calculate exactly how many such registration plates are available.

Extended answer total:\_\_\_\_\_\_\_\_\_/11

TOTAL test marks: \_\_\_\_ / 54