Multiple-choice section

Question 1 [1.1]

34 × 6 can be calculated by:

A multiplying 3 and 6, multiplying 4 and 6, then adding the products

B multiplying 30 and 6, and then adding 4

C multiplying 30 and 6, multiplying 4 and 6, and then adding the products

D multiplying 30, 4 and 6 together.

Question 2 [1.2]

Evaluate: 43 + 34

A 24 B 76 C 151 D 145

Question 3 [1.2]

Between which two consecutive numbers is ?

A 9 and 10 B 10 and 11 C 11 and 12 D 12 and 13

Question 4 [1.3]

The total cost for a class of 30 Year 7 students to watch a movie with a large popcorn is $225. How much should the teacher charge each student?

A $7 B $7.50 C $10 D $12.50

Question 5 [1.3]

Which of the following is an incorrect method for calculating 480 ÷ 8?

A Calculate 4 ÷ 8, 8 ÷ 8 and 0 ÷ 8, then add the results together.

B Halve 480, then halve the answer, then halve the answer again.

C Calculate 400 ÷ 8 and 80 ÷ 8, then add the quotients.

D Calculate 48 ÷ 8, then multiply by 10.

Question 6 [1.4]

Martha sells 255 sandwiches a week at her lunch bar. If she works a 6-day week, what is the closest estimate for how many sandwiches she sells every day?

A 30 B 35 C 40 D 50

Question 7 [1.4]

The answer to 328 × 56 would be closest to:

A 10 000 B 20 000 C 30 000 D 40 000

Question 8 [1.5]

Which symbol would replace \* to make 5 + 27 \* 3 = 14 true?

A + B – C × D ÷

Question 9 [1.5]

The answer to 10 + 62 ÷ (7 + 5) is:

A 11 B 13 C 15 D 17

Question 10 [1.6]

Tiffany received $48 for Christmas, her older brother received double that amount and her younger brother received half of Tiffany’s amount. What is the difference between the amounts of money her two brothers received?

A $35 B $65 C $72 D $88

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

Short answer section

Question 11 2 marks [1.1, 1.4]

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

*associative law index commutative law product distributive law*

*estimate mathematical conventions*

(a) 13 + 8 = 8 + 13 is an example of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(b) To make a calculation easier, an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be obtained by rounding to the first digit.

Question 12 4 marks [1.5]

Mathematical conventions are rules that mathematicians agree to follow. Explain the ‘order of operations’ rules.

Question 13 6 marks [1.1, 1.6]

John cuts his neighbour’s grass each weekend for some pocket money. He receives $8 for cutting the lawn. He saves half of his earnings and spends the other half. How much will John have saved after 6 months? He plans to buy a new bicycle then for $169. He plans to borrow some money from his sister if he does not have quite enough savings. How much will he need to borrow? If he pays back the loan at $5 per week, how long will it take to pay back the loan?

Question 14 5 marks [1.3]

Below is Jonathon’s working for a calculation from his maths test. He was asked to find the answer to  
46 × 35 but he made a mistake.

(a) Identify 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

46 × 35

= 46 × 3 + 46 × 5

= 138 + 230

= 368

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

Question 15 3 marks [1.1]

Use an appropriate mental strategy to find 79 + 246 + 11.

Question 16 3 marks [1.1]

Use the distributive law to calculate 486 × 7.

Question 17 2 marks [1.2]

Write 1005 in expanded form and then evaluate.

Question 18 3 marks [1.2]

Write each of the following in index form.

(a) 4 × 4 × 4 × 4 × 4 (b) base 8, index 7 (c) eight cubed

Question 19 3 marks [1.2]

Calculate the following:

(a)  (b)  (c) 

Question 20 4 marks [1.2]

Arrange the following numbers in ascending order.

24, ,  , 102, 52

Question 21 2 marks [1.2]

For each of the following, determine the missing power of 10.

(a) 4 000 000 = 4 × 10? (b) 30 000 = 30 × 10?

Question 22 6 marks [1.3]

Calculate the following using the ‘work in stages’ strategy.

(a) 270 ÷ 6 (b) 25 × 15

Question 23 3 marks [1.3]

Calculate 39 × 45 using an ‘array’ strategy.

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Question 24 2 marks [1.3]

Michael and seven friends recently won $3000 in a competition. If the winnings must be shared equally among the group of friends and Michael, how much does each person receive?

Question 25 4 marks [1.4]

Estimate the following by rounding to the first digit.

(a) 8565 ÷ 53 (b) 3050 × 283

Question 26 9 marks [1.5]

Evaluate the following.

(a) 8 × (9 – 5) ÷ 2 (b) 45 ÷ 9 × 23 ÷ (5 – 1) + 11 (c) 80 + 60 ÷ (3 × 5) – 7 × 2 + 11

Question 27 4 marks [1.5]

Insert brackets to make the following statements true.

(a) 5 + 9 ÷ 3 + 4 = 2 (b) 37 + 8 ÷ 10 – 6 = 39

Short answer total:\_\_\_\_\_\_\_\_\_/65

Extended answer section

Question 28 6 marks [1.1, 1.5, 1.6]

Below are the rates for a new phone company:

Peak time: 35 cents connection fee and 90 cents per minute.

Off-peak time: no connection fee and 65 cents per minute.

Benjamin makes three calls; the first call lasted 1 minute, the second 4 minutes and the third 10 minutes. The last call was made during ‘off-peak’ time.

(a) Calculate the total cost of the calls.

(b) Benjamin has $15 credit on his phone. Using the symbols +, – , ÷ , × and at least one pair of brackets, write down a calculation that Benjamin could use to determine how much credit remained on his phone after the three calls. Does Benjamin have enough credit to make more calls? (If so, how much credit does he have?)

Question 29 4 marks [1.3, 1.6]

The school swimming carnival requires careful planning, especially when the staff and students are taken by bus to the pools. Ms McIntosh, the Deputy Principal, must ensure that all 900 students and 75 staff members arrive at the pools using a minimum number of buses. If each bus holds 65 people, how many buses are needed to take the staff and students to the pools?

Question 30 10 marks [1.1, 1.3, 1.6]

Jerry is a dairy farmer. The milk from his farm is bottled in three different-sized containers,

250 mL, 600 mL and 1000 mL (1 L), each weighing 250 g, 600 g, and 1000 g (1 kg), respectively. Jerry insists on packing bottles of the same size into boxes of 20 before his driver takes them to the shops for sale. The company delivery truck can hold a maximum load of 1000 kg.

(a) Determine the mass, in kg, of a box of 20 bottles for each of the three different sized bottles.

(b) What is the maximum number of each type of box Jerry can safely load onto his delivery truck?

(c) Find two combinations of boxes that would collectively give a total mass within 10 kg of the maximum load capacity, but without exceeding the 1000 kg limit. (There must be at least 10 of each box on the truck).

Extended answer total:\_\_\_\_\_\_\_\_\_/20

TOTAL test marks: \_\_\_\_ / 95