Intermediate Maths Summer 2019 P1 Q1

Circle either TRUE or FALSE for each calculation given below. [3]

CALCULATION		
$23 - (4 + 2) \times 3 = 5$	TRUE	FALSE
$\frac{7}{10} + \frac{2}{5} = \frac{9}{15}$	TRUE	FALSE
$\frac{1}{2}$ of $\frac{1}{8} = \frac{1}{4}$	TRUE	FALSE
25% of 0·4 = 0·1	TRUE	FALSE
$28 - 3 \times 2 + 5 = 55$	TRUE	FALSE

Intermediate Maths Nov 2018 P1 Q1

Consider the following list of numbers:

4 25 27 36 49 64 90 125

(a) Using only the numbers in the list above, write down

(i) the **three** cube numbers, [2]

..... , ... and .....

(ii) a number that is both a square number and a multiple of 9, [1]

(iii) a number that is a factor of 81. [1]

(b) Using **only two numbers from the list**, fill in the spaces in the following statement: [1]

'Dividing ..... by ..... and then rounding the answer to the nearest 10, gives an answer of 30.'

Intermediate Maths Sample 1 P1 Q1

Calculate the following.

(a) $5^2 \times 2^3$ [2]

(b) $0{\cdot}3 \times 0{\cdot}6$ [1]

(c) $8{\cdot}7 - 5{\cdot}25$ [1]

(d) $\frac{7}{8} - \frac{1}{4}$ [2]

Intermediate Maths Sample 2 P2 Q1

Using only the numbers in the following list,

26 27 28 29 30 31 32 33 34

write down

(a) a factor of 96, [1]

(b) a cube number, [1]

(c) a multiple of 8·5, [1]

(d) a prime number. [1]

Intermediate Maths Nov 2016 P2 Q1

Using only the numbers in the following list,

57 58 59 60 61 62 63 64 65

write down

(a) a prime number, [1]

(b) a cube number, [1]

(c) a factor of 186, [1]

(d) a multiple of 7·25. [1]

Intermediate Maths Nov 2016 P1 Q1

Calculate each of the following.

(a) $0{\cdot}4 \times 0{\cdot}7$ [1]

(b) $13{\cdot}8 - 7{\cdot}45$ [1]

(c) $3^3 - 2^4$ [2]

(d) $\frac{9}{10} - \frac{3}{5}$ [2]

Intermediate Maths Nov 2017 P1 Q1

Calculate each of the following.

(a) $3^4 \times 10^3$ [2]

(b) $\frac{1}{0{\cdot}5}$ [1]

(c) $5{\cdot}6 - 3{\cdot}82$ [1]

(d) $\frac{5}{6} - \frac{2}{3}$ [2]

(e) $0{\cdot}2 \times 0{\cdot}3$ [1]

Intermediate Maths Summer 2018 P1 Q1

Using only the numbers in the following list,

10 11 12 13 14 15 16 17 18 19 20

write down

(a) two **prime** numbers that have a sum of 32, [2]

(b) a number that is a multiple of **both** 4 **and** 6, [2]

(c) a number that is a factor of 51. [1]

Intermediate Maths Sample 1 P2 Q2

2. A number machine is shown below.

Circle your answer in each of the following.

(a) When the INPUT is 4 the OUTPUT is

33 –9 –17 9 17

[1]

(b) When the OUTPUT is 15 the input is

38 –38 –12 12 –2

[1]

(c) When the INPUT is n the OUTPUT is

$3n-7$ $n-21$ $7(n-3)$ $-21n$ $3(n-7)$

[1]

Intermediate Numeracy Summer 2019 P1 Q3b

Gareth's luggage weighed 21·13 kg.
This was over the maximum of 20 kg allowed.

Gareth removed items from his luggage so that its mass was:

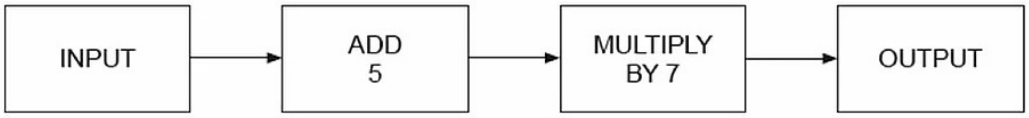
- as close to 20 kg as possible,
- **not greater** than 20 kg.

From the following list of items, which **two** items did Gareth remove?
You must show all your working. [3]

Coat	Headphones	Jumper	Book	Hat
820 g	300 g	320 g	340 g	200 g

Intermediate Maths Nov 2016 P2 Q4b

(b) A number machine is shown below.

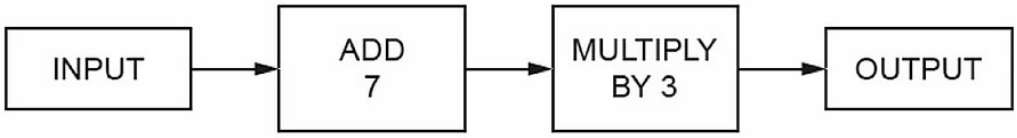


(i) Calculate the OUTPUT when the INPUT is −2. [1]

(ii) Write down an expression for the OUTPUT when the INPUT is n. [2]

Intermediate Maths June 2017 P2 Q4

The diagram below shows a number machine.



Using the number machine, calculate:

(a) the INPUT when the OUTPUT is 36, [1]

(b) the OUTPUT when the INPUT is n. [2]

Intermediate Numeracy Nov 2018 P2 Q4b

Last year, *Rushmoore Energy* had 8·58 million customers.
The previous year, *Rushmoore Energy* had 8·21 million customers.
How many extra customers were there last year?
Circle your answer. [1]

37 000 370 000 3 700 000 0·37 37 000 000

Intermediate Maths Summer 2019 P1 Q5

In this question, you must use only the numbers 3 and 7 to make other numbers.
You must only add or subtract.

For example, if we wanted an answer of 11, we could write

$$7 + 7 - 3 = 11.$$

Show how you can get each of the following answers.

(a) 2 [1]

(b) 8 [1]

(c) 19 [1]

Intermediate Numeracy Sam 2 P1 Q4

Thomas buys a number of items from a market stall with two £20 notes and one £10 note.

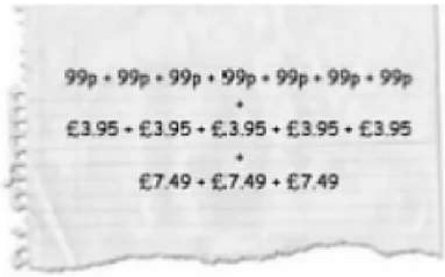
These are the items Thomas buys:

cereal bars at 99p each

5 pairs of socks at £3.95 each

3 sweaters at £7.49 each

Thomas waits for the owner of the market stall to list all the items he has selected.



The owner then uses a calculator to add these costs individually and gives Thomas 75p change.

(a) Without the use of a calculator, how could Thomas check the calculation by using an efficient method?
You must show all your working.

[4]

(b) Did Thomas receive the correct change? If not, state the correct amount.

[1]

Intermediate Maths Nov 2016 P2 Q5

Complete each row of the following table.
The first row has been done for you. [3]

Place	Temperature at midday	Change	Temperature at following midday
Holyhead	−1°C	Up 3°C	2°C
Dolgellau	−3°C		1°C
Cardigan	2°C	Down 3°C	
Newport		Up 2°C	−2°C

Intermediate Maths Sample 1 P1 Q7

Are the following statements true or false? Circle the correct answer.
You must give a full explanation of your decision in each case.

(a)
When a number that ends in 8 is divided by 2, the answer is always a multiple of 4. [1]

true / false

(b)
When two consecutive whole numbers are multiplied together, the answer is always an even number. [2]

true / false

Intermediate Maths Summer 2018 P1 Q7

Find the whole number that satisfies all of the following conditions.

- It is a whole number between 1 and 100 inclusive.
- 10% of the number is greater than 2 but less than 8.
- $\frac{1}{2}$ of the number is a square number.
- The number is **not** a multiple of 4. [3]

Intermediate Maths Nov 2016 P1 Q8

Two types of number are added or multiplied together.
Complete the table below to show whether the answer will be odd or even.
One answer has been filled in for you. [3]

Calculation:	Answer will be:
even number + even number	even
even number + odd number	
odd number + odd number	
even number × even number	
even number × odd number	
odd number × odd number	

Intermediate Maths June 2017 P1 Q8b

Given that $54 \times 84{\cdot}2 = 4546{\cdot}8$, write down the exact value of each of the following.

(i) 540×842 = ... [1]

(ii) $\dfrac{4546{\cdot}8}{5{\cdot}4}$ = ... [1]

(iii) $\frac{454{\cdot}68}{84{\cdot}2}$ = ... [1]

Intermediate Maths Nov 2018 P2 Q13

Jonathan writes a whole number on a card.

- The number is between 55 and 83 inclusive.
- The square root of the number is greater than 8 but less than 9.
- The highest common factor (HCF) of 49 and the number is 7.
- $\frac{3}{5}$ of the number is a multiple of 6.

What number is on Jonathan's card? [3]