Mixed Puzzles

26 minutes

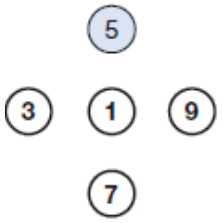
26 marks

M1. 1, 2 and 5

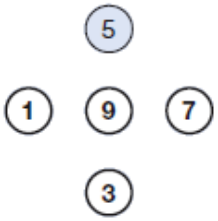
Numbers may be given in any order.

[1]

M2. Diagram completed so that totals across and down are both 13 **OR** both 17, eg:



OR



U1

[1]

M3. All four correct

1 & 42

2 & 21

3 & 14

6 & 7

2

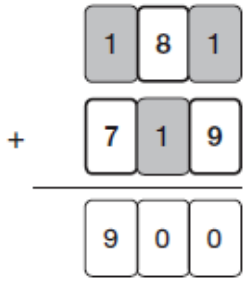
or

any three correct

1

[2]

M4.



[1]

M5. (a) 1.5

Accept equivalent fractions or decimals, or use of words

1

5

Do not accept distance in mm without units specified

1

(b) Indicates 4.5 and 11.5

2

or

One correct

or

Scale misread but arrows placed symmetrically about point E

1

Accept Accuracy within ± 2m

[4]

M6. 1.9

1

2.8

1

[2]

M7. (a) Indicates 10

1

Indicates 16

1

Indicates 30

1

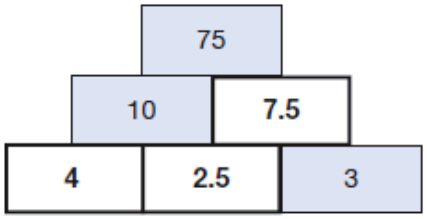
(b) Indicates 24

1

[4]

M8. Gives the three correct numbers in their correct positions, ie:

•



Accept unambiguous indication
Accept equivalent fractions, eg:

- $7\frac{5}{10}$ *for 7.5*

2

or

Gives two correct numbers in their correct positions

1

[2]

M9. All three correct

61
15
65

2

or

Any two correct

1

[2]

M10.

$$\begin{array}{r} \boxed{2}\,3\;1\;7 \\ \times \quad 3\,\boxed{5} \\ \hline \end{array}$$

[2]

M11. (a) 3

1

(b) Gives an explanation that justifies why the range cannot be 2, eg:

- The difference between the smallest and the largest would be 2 but here it is 3 even before you put any number in
- It must be at least 3 because 4 − 1 = 3
- The range is already 3
- The range is at least the difference between 1 and 4.
  So the range is more than 2

Accept minimally acceptable explanation

(1) *Includes the following:*

range ***or*** *4 – 1* ***or*** *highest – lowest*

and

is 3 ***or*** *greater than 2, eg:*

- *The range is 3*
- *4 – 1 = 3*

OR

(2) *Shows one of the given numbers as the smallest / largest number*

and

shows how the number at either end of the range should change to make range 2, eg:

- *The highest would need to be 3, but 4 is the highest*
- *The lowest would need to be 2, but 1 is the lowest*
- *Because the highest is 4, the lowest would need to be 2*

Do not accept *incomplete or ambiguous explanation, eg:*

- *It must be bigger than 2*
- *Lowest is 1, highest 4*
- *Range is difference between highest and lowest*
- *The range is already too great between 1 and 4*

! Condone responses that assume 1 is always the lowest possible number, provided the remainder of the explanation is correct

! Condone creditworthy explanations that indicate the blank card is the child's value from part (a)

1

[2]

M12. 2^3 3^2 5^2 3^3

Accept 8, 9, 25, 27

[1]

M13. Gives all three correct values, ie

$a = 16$, $b = 8$, $c = 6$

2

Gives at least one correct value

or

Gives three values that satisfy the second and third equations

eg

- $a = 18$, $b = 6$, $c = 8$
  (satisfies $a + b = 24$ and $b + c = 14$:
  note that $a - c = 10$)

1

[2]