

Year 6 – Reasoning & problem solving

General marking principles

- Answers should be single values in their simplest form unless the mark scheme says otherwise
- Accept reversed digits provided intention is clear e.g. a reversed 2 must clearly show the characteristics of a 2 rather than a 5
- Do not award the mark if more than one answer is given
- For numbers with four or more digits, accept answers with a comma positioned incorrectly or without a comma. Do not accept a decimal point or an apostrophe.

Question	Answer	Marks	Notes and guidance
1	<div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">1</div> <div style="border: 1px solid black; padding: 2px 5px;">5</div> <div style="border: 1px solid black; padding: 2px 5px;">9</div> <div style="border: 1px solid black; padding: 2px 5px;">6</div> </div>	1	
2	7,000,000	1	Accept e.g. "7 million".
3	$500 + 1,500 = 2,000$ $500 \times 4 = 2,000$	2	Award 1 mark for each correct answer. No marks if numbers are reversed.
4	875,102 7,012,850 7,085,210 7,201,850	1	
5	-2	1	
6	1,990,000	1	
7	144	2	Award 1 mark for attempt to multiply 12 by 4 and multiply the result by 3, or equivalent. Accept 1 m 44 cm or other equivalent answers.
8	Indicates "Yes" and gives a correct reason e.g. "1 is the only number that divides into both of them exactly"	1	

Question	Answer	Marks	Notes and guidance
9	Indicates $\frac{3}{5}$ and $\frac{15}{25}$	1	
10	680 ml	2	Accept any equivalent answer e.g. 0.68 litres or 68 cl etc. Award 1 mark for complete correct method with no more than one arithmetic error e.g. attempt to multiply 220 by 6 and subtract the result from 2,000
11	32	2	Award 1 mark for complete correct method to divide 768 by 24 with no more than one arithmetic error e.g. long division, short division, division by 12 and then division by 2 etc.
12	$6 + 2 \times 5 = 16$	1	
13	Indicates DX and gives a reason e.g. <ul style="list-style-type: none"> It's only 10 more and the other one is 50 less DX = 510 but CDL = 450 	1	
14	$2 \frac{\boxed{10}}{4} = \frac{12}{5}$	1	
	$\frac{2}{3}$ of 60 = $\frac{4}{5}$ of $\boxed{50}$	2	Award 1 mark for $\frac{2}{3}$ of 60 = 40 seen or implied
15	17	2	Award 1 mark for complete correct method e.g. attempt to divide 660 by 40 with no more than one arithmetic error. Do not accept 16.5 or equivalent for both marks

Question	Answer	Marks	Notes and guidance
16	$\frac{2}{9}, \frac{2}{7}, \frac{3}{7}, \frac{3}{5}$	1	
17	$3\frac{3}{20}$	2	Accept equivalent fractions or exact decimal i.e. 3.15 Award 1 mark for correct method to add $5\frac{1}{2}$ and $2\frac{2}{5}$ and subtract $4\frac{3}{4}$ with no more than one arithmetic error.
18	1.75 km	2	Accept any exact equivalent e.g. 1,750 m. Award 1 mark for correct method with no more than one arithmetic error e.g. attempt to subtract 3×250 from 6,000 and divide the result by 3
19	75	3	Award 1 mark for correct method to find three-quarters 60 (45) Award 2 nd mark for correct method to find the total number of counters now in the box (45×3) and subtract 60

Total : 30 marks