

WA5MNAUN6

Understanding number

Core + Challenge

NAPLAN-style

Mixed Numerals — Marking Key

I can show mixed numerals with shapes and number lines, and change them to and from improper fractions.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

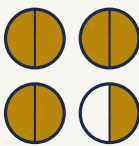
Marks summary

A Warm up: 16 B Practise: 21 C Think it through: 10 D Challenge: 9 **Total: 56**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

A Warm up answers

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	$1\frac{3}{4}$	1 whole shaded and $\frac{3}{4}$ more.	1
2	$2\frac{1}{3}$	2 wholes shaded and $\frac{1}{3}$ more.	1
3	$2\frac{1}{2}$	2 wholes shaded and $\frac{1}{2}$ more.	1
4	$1\frac{5}{6}$	1 whole shaded and $\frac{5}{6}$ more.	1
5	5 parts shaded	 1 whole shape and $\frac{2}{3}$ of the next one.	1
6	11 parts shaded	 2 whole shapes and $\frac{3}{4}$ of the next one.	1
7	6 parts shaded	 1 whole shape and $\frac{1}{5}$ of the next one.	1
8	7 parts shaded	 3 whole shapes and $\frac{1}{2}$ of the next one.	1
9	$2\frac{1}{4}$	$9 \div 4 = 2$ remainder 1.	1
10	$4\frac{1}{2}$	$9 \div 2 = 4$ remainder 1.	1

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Q	Answer	Model answer / notes	Marks
11	$2\frac{3}{5}$	$13 \div 5 = 2$ remainder 3.	1
12	$3\frac{1}{3}$	$10 \div 3 = 3$ remainder 1.	1
13	$2\frac{1}{3}$	Each whole has 3 equal spaces. The dot is 1 space past 2.	1
14	$1\frac{1}{4}$	Each whole has 4 equal spaces. The dot is 1 space past 1.	1
15	$2\frac{4}{5}$	Each whole has 5 equal spaces. The dot is 4 spaces past 2.	1
16	$2\frac{1}{6}$	Each whole has 6 equal spaces. The dot is 1 space past 2.	1

B

Practise *answers and working*

/ 21 marks

Q	Answer	Working / sample response	Marks
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1 $\frac{19}{8} = 2\frac{3}{8}$ pizzas

19 slices of 8 = $\frac{19}{8}$.

16 slices make 2 whole pizzas, and 3 slices are left: $2\frac{3}{8}$.

3

1 mark: 19 slices shaded.

1 mark: $\frac{19}{8}$.

1 mark: $2\frac{3}{8}$.

2 See table

Words	Improper	Mixed
eleven quarters	$\frac{11}{4}$	$2\frac{3}{4}$
eight thirds	$\frac{8}{3}$	$2\frac{2}{3}$
sixteen fifths	$\frac{16}{5}$	$3\frac{1}{5}$

3

eleven quarters = $\frac{11}{4} = 2\frac{3}{4}$

eight thirds = $\frac{8}{3} = 2\frac{2}{3}$

sixteen fifths = $\frac{16}{5} = 3\frac{1}{5}$

1 mark for each fully correct row.

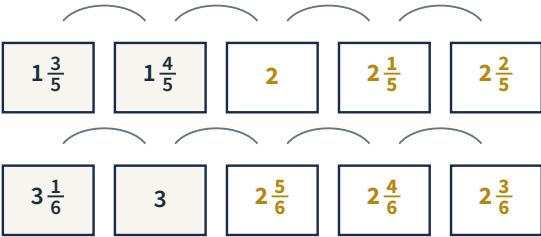
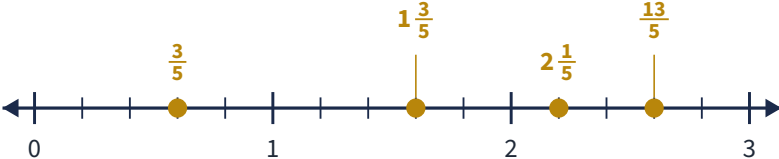
3 $1\frac{2}{4}, 1\frac{3}{4}, 2\frac{1}{4}, 2\frac{2}{4}$

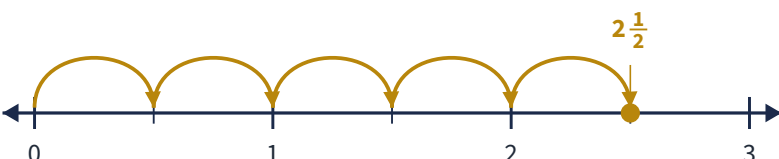
Each whole has 4 spaces of $\frac{1}{4}$.

The boxes are 2 and 3 spaces past 1, then 1 and 2 spaces past 2.

2

2 marks: all four. 1 mark: two or three. Accept $1\frac{1}{2}$ and $2\frac{1}{2}$.

Q	Answer	Working / sample response	Marks
4	a) $2, 2\frac{1}{5}, 2\frac{2}{5}$ b) $2\frac{5}{6}, 2\frac{4}{6}, 2\frac{3}{6}$	 a) $1\frac{4}{5} + \frac{1}{5} = 1\frac{5}{5} = 2$, then $2\frac{1}{5}, 2\frac{2}{5}$. b) $3 - \frac{1}{6} = 2\frac{5}{6}$, then $2\frac{4}{6}, 2\frac{3}{6}$. <i>1 mark each part (all three boxes). Accept $2\frac{2}{3}$ and $2\frac{1}{2}$ in b).</i>	2
5	$2\frac{5}{6}$ trays; 1 more muffin	 $17 = 6 + 6 + 5$: two full trays and 5 of 6 in the third tray. So $2\frac{5}{6}$ trays. $18 - 17 = 1$ more muffin fills 3 trays. <i>1 mark: 17 shaded. 1 mark: $2\frac{5}{6}$. 1 mark: 1 muffin.</i>	3
6	See number line	 Each whole has 5 spaces of $\frac{1}{5}$. $1\frac{3}{5}$ is 3 spaces past 1, $2\frac{1}{5}$ is 1 space past 2 and $\frac{13}{5} = 2\frac{3}{5}$ is 3 spaces past 2. <i>2 marks: all four. 1 mark: two or three.</i>	2
7	a) $\frac{13}{4}$ b) $\frac{17}{6}$	a) $\frac{31}{4}$ $\frac{13}{4}$ $\frac{7}{4}$ $\frac{12}{4}$ b) $\frac{11}{6}$ $\frac{17}{6}$ $\frac{19}{6}$ $\frac{12}{6}$ a) 3 wholes = 12 quarters, and $12 + 1 = 13$: $\frac{13}{4}$. b) $2 = \frac{12}{6}$ and $3 = \frac{18}{6}$. Only $\frac{17}{6}$ is between them. <i>1 mark each.</i>	2
8	$1\frac{1}{3}, \frac{5}{3}, 2\frac{1}{3}, \frac{8}{3}$	In thirds: $2\frac{1}{3} = \frac{7}{3}, 1\frac{1}{3} = \frac{4}{3}$. $\frac{4}{3} < \frac{5}{3} < \frac{7}{3} < \frac{8}{3}$. <i>2 marks: correct order. 1 mark: one pair swapped.</i>	2

Q	Answer	Working / sample response	Marks
9	$\frac{5}{2} \text{ km} = 2\frac{1}{2} \text{ km}$	 5 jumps of $\frac{1}{2}$: $\frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \frac{4}{2}, \frac{5}{2}$. $\frac{4}{2} = 2$, so $\frac{5}{2} = 2\frac{1}{2} \text{ km}$. <i>1 mark: 5 jumps drawn.</i> <i>1 mark: $\frac{5}{2}$ and $2\frac{1}{2}$.</i>	2

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No, $2\frac{1}{4} = \frac{9}{4}$	2 wholes = 8 quarters, plus 1 quarter = 9 quarters. So $2\frac{1}{4} = \frac{9}{4}$. Jack just joined the digits 2 and 1. <i>1 mark: No / $\frac{9}{4}$.</i> <i>1 mark: explains 2 wholes = 8 quarters (or a correct diagram).</i>	2
2	True	4 quarters make 1 whole. 12 quarters make $12 \div 4 = 3$ wholes, so $\frac{12}{4} = 3$. <i>1 mark: True.</i> <i>1 mark: shows $\frac{12}{4} = 3$.</i>	2
3	Sometimes	☐ Always ☒ Sometimes ☐ Never $\frac{7}{3} = 2\frac{1}{3}$, so it works for some. But $\frac{6}{3} = 2$, a whole number with no fraction part, so it is only sometimes true. <i>1 mark: Sometimes.</i> <i>1 mark: one example that works and one that gives a whole number (e.g. $\frac{4}{4} = 1$).</i>	2
4	$3\frac{1}{4}$	$2\frac{3}{4} = \frac{11}{4}$. $1\frac{7}{4} = 1 + \frac{7}{4} = \frac{4}{4} + \frac{7}{4} = \frac{11}{4}$ too. $3\frac{1}{4} = \frac{13}{4}$, so it is the odd one out. <i>1 mark: $3\frac{1}{4}$.</i> <i>1 mark: shows the other three are all $\frac{11}{4}$.</i>	2
5	$3\frac{2}{5}$	5 fifths make 1 whole. $17 \div 5 = 3$ remainder 2. So there are 3 wholes and 2 fifths left over: $3\frac{2}{5}$. <i>1 mark: a clear method (dividing by 5 or counting groups of 5 fifths).</i> <i>1 mark: $3\frac{2}{5}$.</i>	2

D

Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	$2\frac{3}{5}, 3\frac{2}{5}, 5\frac{2}{3}; \frac{17}{3}$	The fraction part needs the smaller digit on top. Whole 2: $2\frac{3}{5}$. Whole 3: $3\frac{2}{5}$. Whole 5: $5\frac{2}{3}$. Largest: $5\frac{2}{3} = 15 \text{ thirds} + 2 \text{ thirds} = \frac{17}{3}$. <i>2 marks: all three (1 mark for two). 1 mark: $\frac{17}{3}$.</i>	3
2	5 pies	$2\frac{5}{6}$ pies = $12 + 5 = 17$ slices left. $17 + 13 = 30$ slices at the start. $30 \div 6 = 5$ pies. <i>1 mark: 17 slices. 1 mark: 30 slices. 1 mark: 5 pies.</i>	3
3	a) $3\frac{3}{4}$ b) 4 jumps (on 3) c) Yes, 8 jumps	 The frog lands on $\frac{3}{4}, \frac{6}{4}, \frac{9}{4}, \frac{12}{4}, \frac{15}{4}, \dots$ (counting on 3 quarters each time). a) $\frac{15}{4} = 3\frac{3}{4}$. b) $\frac{12}{4} = 3$ after 4 jumps. c) $6 = \frac{24}{4}$, and $24 \div 3 = 8$ jumps. <i>1 mark each part.</i>	3