

## To know how to multiply a mixed number by an integer

- 1 a Ellie is using partitioning and repeated addition to calculate  $2 \frac{5}{6} \times 3$ . Complete Ellie's calculation and find the answer.

2	5	x	3	=	<div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 20px;"></div>	+	<div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 20px;"></div>	+	<div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 20px;"></div>	=	<div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 20px;"></div>	=	<div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 20px;"></div>
6													

- b Joseph is using a bar method and partitioning to solve  $1 \frac{4}{7} \times 2$ . Complete Joseph's working and find the answer.


Use your preferred method to calculate:

c  $1 \frac{3}{7} \times 2$

d  $3 \frac{2}{3} \times 5$

e  $2 \frac{1}{4} \times 6$

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2 Convert the mixed number to an improper fraction to calculate:

a  $3 \frac{2}{7} \times 4$

b  $2 \frac{4}{9} \times 2$

c  $4 \times 3 \frac{3}{5}$

d Match the calculation to the answer and convert the answer to a mixed number.

$$2 \frac{5}{8} \times 6$$

$$19 \frac{1}{2}$$

$$1 \frac{3}{4} \times 6$$

$$15 \frac{3}{4}$$

$$6 \times 3 \frac{1}{4}$$

$$10 \frac{1}{2}$$

3 a Lena runs  $2 \frac{2}{3}$  miles three times per week.

Casper runs  $3 \frac{3}{4}$  miles twice per week.

Who runs the furthest each week and by how much?

Explain your answer.

b Ajax the sloth moves very, very slowly. He climbs  $3 \frac{4}{5}$  meters per day.  
How many days will it take Ajax to reach the top of a 19m tall tree?

c Work out the missing numbers.  
Explain how you worked it out.

2	x	=	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="border-bottom: 1px solid black; width: 100%;">7</div> <div style="width: 100%;">8</div> </div>
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Question Number	Question	Answer
1	<p>a) Complete Ellie's calculation and find the answer.</p> <p>b) Complete Joseph's working and find the answer.</p> <p>Use your preferred method to solve:</p> <p>c) <math>1\frac{3}{7} \times 2</math></p> <p>d) <math>3\frac{2}{3} \times 5</math></p> <p>e) <math>2\frac{1}{4} \times 6</math></p>	<p>a) <math>2\frac{5}{6} \times 3 = 2\frac{5}{6} + 2\frac{5}{6} + 2\frac{5}{6} = 6\frac{15}{6} = 8\frac{3}{6}</math> or <math>8\frac{1}{2}</math></p> <p>b) <math>1\frac{4}{7} \times 2 \quad 1 \times 2 = 2\frac{4}{7} \times 2 = \frac{8}{7} = 1\frac{1}{7} \quad 2 + 1\frac{1}{7} = 3\frac{1}{7}</math></p> <p>c) <math>1\frac{3}{7} \times 2 = 2\frac{6}{7}</math></p> <p>d) <math>3\frac{2}{3} \times 5 = 15\frac{10}{3} = 18\frac{1}{3}</math></p> <p>e) <math>2\frac{1}{4} \times 6 = 12\frac{6}{4} = 13\frac{2}{4}</math> or <math>13\frac{1}{2}</math></p>
2	<p>Convert the mixed number to an improper fraction to calculate:</p> <p>a) <math>3\frac{2}{7} \times 4</math></p> <p>b) <math>2\frac{4}{9} \times 2</math></p> <p>c) <math>4 \times 3\frac{3}{5}</math></p> <p>d) Match the calculation to the answer and convert the answer to a mixed number</p>	<p>a) <math>3\frac{2}{7} \times 4 = \frac{23}{7} \times 4 = \frac{92}{7} = 13\frac{1}{7}</math></p> <p>b) <math>2\frac{4}{9} \times 2 = \frac{22}{9} \times 2 = \frac{44}{9} = 4\frac{8}{9}</math></p> <p>c) <math>4 \times 3\frac{3}{5} = 4 \times \frac{18}{5} = \frac{72}{5} = 14\frac{2}{5}</math></p> <p>d) <math>2\frac{5}{8} \times 6 = \frac{21}{8} \times 6 = \frac{126}{8} = 15\frac{6}{8} = 15\frac{3}{4}</math>  <math>1\frac{3}{4} \times 6 = \frac{7}{4} \times 6 = \frac{42}{4} = 10\frac{2}{4} = 10\frac{1}{2}</math>  <math>6 \times 3\frac{1}{4} = 6 \times \frac{13}{4} = \frac{78}{4} = 19\frac{2}{4} = 19\frac{1}{2}</math></p>
3	<p>a) Lena runs <math>2\frac{2}{3}</math> miles three times per week. Casper runs <math>3\frac{3}{4}</math> miles twice per week. Who runs the furthest each week and by how much? Explain your answer.</p> <p>b) Ajax the sloth moves very, very slowly. He climbs <math>3\frac{4}{5}</math> meters per day. How many days will it take Ajax to reach the top of a 19m tall tree?</p> <p>c) Work out the missing numbers. Explain how you worked it out.</p>	<p>a) Lena: <math>2\frac{2}{3} \times 3 = 6 + \frac{6}{3} = 6 + 2 = 8</math> miles Casper: <math>3\frac{3}{4} \times 2 = 6 + \frac{6}{4} = 6 + 1\frac{2}{4} = 7\frac{2}{4} = 7\frac{1}{2}</math> miles</p> <p>b) Lena runs further by <math>\frac{1}{2}</math> mile each week. Converting to an improper fraction and counting in fractions: <math>3\frac{4}{5} = \frac{19}{5}</math> <math>\frac{19}{5}, \frac{38}{5}, \frac{57}{5}, \frac{76}{5}, \frac{95}{5}</math> <math>\frac{95}{5} = 19</math> so it will take 5 days. Alternatively, <math>3\frac{4}{5} \times 5 = 15 + \frac{20}{5} = 15 + 4 = 19</math></p> <p>c) <math>2\frac{5}{8} \times 3 = 7\frac{7}{8}</math> The multiplier could not be 4 because that would give an answer of at least 8.</p>