

15. [Number Patterns / Equations]

Skill 15.1 Completing number patterns by adding the same number.

MM3.2 1 1 2 2 3 3 4 4
MM4.1 1 1 2 2 3 3 4 4

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Q. 1, 7, 13, 19, 25, _ , _

A. 1, 7, 13, 19, 25, 31, 37

Ask: “Are the numbers increasing or decreasing?”
 “How can you get from 1 to 7?”

Answer: To get from 1 to 7, add 6.
 To get from 7 to 13, add 6.
 To get from 13 to 19, add 6, etc.
 So the rule of the pattern is:
 “Add 6 to the previous number.”
 Apply this rule to the last given number.
 $25 + 6 = 31$
 $31 + 6 = 37$

<p>a) 5, 9, 13, 17, 21, 25 , 29</p> <p style="text-align: center;"> </p>	<p>b) 9, 14, 19, 24, 29, _ , _</p> <p style="text-align: center;"> </p>
<p>c) 8, 11, 14, 17, 20, _ , _</p> <p style="text-align: center;"> </p>	<p>d) 6, 16, 26, 36, 46, _ , _</p> <p style="text-align: center;"> </p>
<p>e) 3, 10, 17, 24, 31, _ , _</p> <p style="text-align: center;"> </p>	<p>f) 5, 14, 23, 32, 41, _ , _</p> <p style="text-align: center;"> </p>
<p>g) 5, 11, 17, 23, 29, _ , _</p> <p style="text-align: center;"> </p>	<p>h) 10, 17, 24, 31, 38, _ , _</p> <p style="text-align: center;"> </p>
<p>i) 44, 46, 48, 50, 52, _ , _</p> <p style="text-align: center;"> </p>	<p>j) 7, 15, 23, 31, 39, _ , _</p> <p style="text-align: center;"> </p>

Skill 15.2 Solving equations involving addition (+)

MM3.2 1 1 22 33 44
MM4.1 1 1 22 33 44

- Rewrite the addition as an equivalent subtraction.

Hint: $3 + 8 = 11$ can also be written as $11 - 8 = 3$ OR $11 - 3 = 8$

OR

- Guess the value of the missing number that will make the equation true.

(Both sides of the number sentence must be equal).

- Fill in this value in the equation and check the sum.

Hint: If the total on the left hand side of the equation is not enough then add a larger number.

If the total on the left hand side of the equation is too great then add a smaller number.

- Keep guessing and checking until the number sentence is true.

Q. + 7 = 16

A. ? + 7 = 16

16 - 7 = ?

9 = ?

so ? = 9

The addition can be written as an equivalent subtraction.

The unknown number is 9.

OR ? + 7 = 16

10 + 7 = 17

9 + 7 = 16

Guess 10.

Adding 10 gives a sum of 17

- too big so guess a smaller number.

Guess 9.

Check again.

a) 8 + = 27

27 - 8 = ?

19 = ?

b) 12 + = 18

c) 5 + = 13

d) + 12 = 30

e) + 9 = 21

f) + 16 = 25

g) 17 + = 25

h) 14 + = 29

i) 26 + = 43

j) + 15 = 28

k) + 13 = 23

l) + 16 = 30

Skill 15.3 Completing number patterns by subtracting the same number.

MM3.2 1 1 2 2 3 3 4 4
MM4.1 1 1 2 2 3 3 4 4

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Q. 59, 50, 41, 32, 23, _ , _

A. 59, 50, 41, 32, 23, 14, 5

$\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ -9 & -9 & -9 & -9 & -9 & -9 \\ \hline & & & & & \end{array}$

Ask: “Are the numbers increasing or decreasing?”
 “How can you get from 59 to 50?”

Answer: To get from 59 to 50, subtract 9.
 To get from 50 to 41, subtract 9.
 To get from 41 to 32, subtract 9, etc.
 So the rule of the pattern is:
 “Subtract 9 from the previous number.”
 Apply this rule to the last given number.
 $23 - 9 = 14$
 $14 - 9 = 5$

<p>a) 45, 38, 31, 24, 17, 10 , 3</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ -7 & -7 & -7 & -7 & -7 & -7 \\ \hline & & & & & \end{array}$ </p>	<p>b) 16, 14, 12, 10, 8, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>
<p>c) 42, 36, 30, 24, 18, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>	<p>d) 33, 28, 23, 18, 13, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>
<p>e) 51, 43, 35, 27, 19, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>	<p>f) 51, 47, 43, 39, 35, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>
<p>g) 39, 36, 33, 30, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>	<p>h) 108, 99, 90, 81, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>
<p>i) 77, 67, 57, 47, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>	<p>j) 42, 38, 34, 30, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ & & & & & \\ \hline & & & & & \end{array}$ </p>

Skill 15.4 Solving equations involving subtraction (-)

MM3.2 1 1 2 3 3 4 4
MM4.1 1 1 2 2 3 3 4 4

- Rewrite the subtraction as an equivalent addition or subtraction.

Hints: $12 - 7 = 5$ can also be written as $5 + 7 = 12$ OR $12 - 5 = 7$

OR

- Guess the value of the missing number that will make the equation true.

(Both sides of the number sentence must be equal).

- Fill in this value in the equation and check the subtraction.

Hints: If the total on the left hand side of the equation is not enough then subtract a smaller number.

If the total on the left hand side of the equation is too great then subtract a larger number.

- Keep guessing and checking until the number sentence is true.

Q. $21 - \square = 14$

A. $21 - ? = 14$

$21 - 14 = ?$

$7 = ?$

so $? = 7$

The subtraction can be written as another equivalent subtraction.

The unknown number is 7.

OR $21 - ? = 14$

$21 - 5 = 16$

$21 - 7 = 14$

Guess 5.

Subtracting 5 gives a result of 16 - too big, so guess a larger number.

Guess 7.

Check again.

a) $23 - 7 = 16$

$16 + 7 = ?$

$23 = ?$

b) $\square - 9 = 7$

c) $\square - 6 = 14$

d) $17 - \square = 13$

e) $25 - \square = 18$

f) $30 - \square = 21$

g) $19 - \square = 5$

h) $18 - \square = 11$

i) $33 - \square = 15$

j) $\square - 8 = 24$

k) $\square - 15 = 21$

l) $\square - 12 = 35$

Skill 15.5 Completing number patterns by multiplying by the same number

MM3.2 1 1 2 2 3 3 4 4
MM4.1 1 1 2 2 3 3 4 4

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Q. 1, 5, 25, 125, _ , _

A. 1, 5, 25, 125, 625, 3125

$\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \times 5 & \times 5 & \times 5 & \times 5 & \times 5 \end{array}$

Ask: “Are the numbers increasing or decreasing?”
 “How can you get from 1 to 5?”

Answer: To get from 1 to 5, multiply by 5.
 To get from 5 to 25, multiply by 5.
 To get from 25 to 125, multiply by 5.
 So the rule of the pattern is:
 “Multiply the previous number by 5.”
 Apply this rule to the last given number.
 $125 \times 5 = 625$
 $625 \times 5 = 3125$

<p>a) 2, 8, 32, 128, 512, 2048</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \times 4 & \times 4 & \times 4 & \times 4 & \times 4 & \times 4 \end{array}$ </p>	<p>b) 1, 2, 4, 8, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>c) 1, 3, 9, 27, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>d) 9, 18, 36, 72, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>e) 15, 30, 60, 120, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>f) 2, 6, 18, 54, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>g) 1, 4, 16, 64, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>h) 3, 30, 300, 3000, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>i) 2, 10, 50, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>j) 4, 20, 100, 500, _ , _</p> <p style="text-align: center;"> $\begin{array}{cccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$ </p>

Skill 15.6 Completing number patterns by dividing by the same number.

MM3.2 11 22 33 44
MM4.1 11 22 33 44

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Q. 243, 81, 27, 9, _ , _ **A.** 243, 81, 27, 9, 3, 1

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \div 3 & \div 3 & \div 3 & \div 3 & \div 3 \end{array}$

Ask: “Are the numbers increasing or decreasing?”

“How can you get from 243 to 81?”

Answer: To get from 243 to 81, divide by 3.

To get from 81 to 27, divide by 3.

To get from 27 to 9, divide by 3.

So the rule of the pattern is:

“Divide the previous number by 3.”

Apply this rule to the last given number.

$$9 \div 3 = 3$$

$$3 \div 3 = 1$$

a) 64, 32, 16, 8, 4 , 2

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \div 2 & \div 2 & \div 2 & \div 2 & \div 2 \end{array}$

b) 224, 112, 56, 28, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

c) 4096, 1024, 256, 64, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

d) 3750, 750, 150, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

e) 972, 324, 108, 36, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

f) 1215, 405, 135, 45, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

g) 486, 162, 54, 18, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

h) 60 000, 6000, 600, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

i) 25 000, 5000, 1000, 200, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

j) 2048, 512, 128, 32, _ , _

$\begin{array}{ccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots \end{array}$

- Rewrite the multiplication as an equivalent division.

Hint: $3 \times 8 = 24$ can also be written as $24 \div 8 = 3$ OR $24 \div 3 = 8$

OR

- Guess the value of the missing number that will make the equation true.

(Both sides of the number sentence must be equal).

- Fill in this value in the equation and check the multiplication.

Hints: If the total on the left hand side of the equation is not enough then multiply by a larger number.

If the total on the left hand side of the equation is too great then multiply by a smaller number.

- Keep guessing and checking until the number sentence is true.

<p>Q. <input type="text" value=""/> $\times 7 = 63$</p>	<p>A. $? \times 7 = 63$ $63 \div 7 = ?$ $9 = ?$ so $? = 9$</p> <p>OR $? \times 7 = 63$ $8 \times 7 = 56$ $9 \times 7 = 63$</p>	<p>The multiplication can be written as an equivalent division. The unknown number is 9.</p> <p>Guess 8. Multiplying by 8 gives a result of 56 - not enough, so guess a larger number. Guess 9. Check again.</p>
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<p>a) $8 \times$ <input type="text" value="5"/> $= 40$</p> <p>$40 \div 8 = ?$</p> <p>.....</p> <p>$5 = ?$</p> <p>.....</p>	<p>b) $6 \times$ <input type="text"/> $= 48$</p> <p>.....</p>	<p>c) $4 \times$ <input type="text"/> $= 36$</p> <p>.....</p>
<p>d) <input type="text"/> $\times 7 = 56$</p> <p>.....</p>	<p>e) <input type="text"/> $\times 6 = 42$</p> <p>.....</p>	<p>f) <input type="text"/> $\times 9 = 54$</p> <p>.....</p>
<p>g) $9 \times$ <input type="text"/> $= 81$</p> <p>.....</p>	<p>h) $7 \times$ <input type="text"/> $= 77$</p> <p>.....</p>	<p>i) $5 \times$ <input type="text"/> $= 50$</p> <p>.....</p>
<p>j) <input type="text"/> $\times 12 = 120$</p> <p>.....</p>	<p>k) <input type="text"/> $\times 20 = 60$</p> <p>.....</p>	<p>l) <input type="text"/> $\times 11 = 44$</p> <p>.....</p>

Skill 15.8 Completing number patterns by using changing values in the rule.

MM3.2 11 22 33 44
MM4.1 11 22 33 44

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Counting numbers, even numbers and odd numbers have patterns themselves that will create changing numbers in the rule.

Q. 50, 49, 46, 41, 34, _ , _

A. 50, 49, 46, 41, 34, 25, 14

Ask: “Are the numbers increasing or decreasing?”

“How can you get from 50 to 49?”

Answer: To get from 50 to 49, subtract 1.

To get from 49 to 46, subtract 3.

To get from 46 to 41, subtract 5, etc.

So the rule of the pattern is:

“Subtract consecutive odd numbers from the previous number.”

Apply this rule to the last given number.

$$34 - 9 = 25$$

$$25 - 11 = 14$$

a) 15, 15, 16, 18, 21, 25 , 30

b) 2, 4, 8, 14, 22, _ , _

c) 42, 30, 20, 12, 6, _ , _

d) 2, 5, 11, 20, 32, _ , _

e) 21, 20, 18, 15, 11, _ , _

f) 2, 9, 15, 20, 24, _ , _

g) 3, 4, 7, 12, 19, _ , _

h) 5, 15, 24, 32, 39, _ , _

i) 48, 46, 42, 36, 28, _ , _

j) 41, 40, 37, 32, 25, _ , _

- Find the number used to get from term to term.
- Find the operation used to get from term to term.

Hint: Every number pattern is created by a rule involving numbers and operations.

Q. 3, 5.5, 8, 10.5, 13, ,

A. 3, 5.5, 8, 10.5, 13, **15.5**, **18**

$\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ +2.5 & +2.5 & +2.5 & +2.5 & +2.5 & +2.5 \end{array}$

To get from 3 to 5.5, add 2.5
 To get from 5.5 to 8, add 2.5
 To get from 8 to 10.5, add 2.5, etc.
 So the rule of the pattern is:
 “Add 2.5 to the previous number.”
 Apply this rule to the last given number.
 $13 + 2.5 = 15.5$
 $15.5 + 2.5 = 18$

<p>a) 7, 6.2, 5.4, 4.6, 3.8, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ -0.8 & -0.8 & -0.8 & -0.8 & -0.8 & -0.8 \end{array}$ </p>	<p>b) 2, 3.5, 5, 6.5, 8, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>c) 4.3, 4.9, 5.5, 6.1, 6.7, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>d) 5.2, 4.8, 4.4, 4, 3.6, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>e) 3, 4.2, 5.4, 6.6, 7.8, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>f) 10, 9.5, 9, 8.5, 8, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>g) $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{5}{7}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>h) $\frac{29}{6}$, $\frac{26}{6}$, $\frac{23}{6}$, $\frac{20}{6}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>i) $\frac{62}{12}$, $\frac{57}{12}$, $\frac{52}{12}$, $\frac{47}{12}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>j) $\frac{31}{4}$, $\frac{27}{4}$, $\frac{23}{4}$, $\frac{19}{4}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>
<p>k) $2\frac{2}{9}$, $2\frac{3}{9}$, $2\frac{4}{9}$, $2\frac{5}{9}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>	<p>l) $3\frac{1}{8}$, $3\frac{2}{8}$, $3\frac{3}{8}$, $3\frac{4}{8}$, <input type="text"/> , <input type="text"/></p> <p style="text-align: center;"> $\begin{array}{cccccc} \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ \dots & \dots & \dots & \dots & \dots & \dots \end{array}$ </p>

EITHER

- Guess the value of the missing number that will make the equation true.
- To check, divide this guess by the denominator of the fraction.

Hints: If the total on the left hand side of the equation is not enough then use a larger number.

If the total on the left hand side of the equation is too great then use a smaller number.

- Keep guessing and checking until the equation is true.

OR

- Multiply the answer by the denominator of the fraction.

'OF' is another way of saying **'x'**

MULTIPLYING BY FRACTIONS

$$\frac{1}{2} \text{ of } 8 = \frac{1}{2} \times 8 = 8 \div 2 = 4$$

Multiplying by $\frac{1}{2}$ means dividing by 2.

AND Multiplying by $\frac{1}{3}$ means dividing by 3 etc.

Q. $\frac{1}{2}$ of = 18

A. $? \div 2 = 18$
 $40 \div 2 = 20$
 $? \div 2 = 18$
 $36 \div 2 = 18$
 so $? = \mathbf{36}$
 OR $18 \times 2 = \mathbf{36}$

Guess 40
 Too large, so guess a smaller number.
 Guess 36
 Correct.

a) $\frac{1}{4}$ of = 6

$6 \times 4 = ?$

$24 = ?$

b) $\frac{1}{2}$ of = 9

c) $\frac{1}{2}$ of = 12

d) $\frac{1}{3}$ of = 10

e) $\frac{1}{4}$ of = 7

f) $\frac{1}{3}$ of = 12

g) $\frac{1}{2}$ of = 16

h) $\frac{1}{2}$ of = 21

i) $\frac{1}{4}$ of = 20