

Use letters to generalise number



1 Complete the calculations.

a)

5	5	5
---	---	---

$5 + 5 + 5 = \boxed{3} \times 5 = 5 \times \boxed{3}$

b)

7	7	7	7
---	---	---	---

$7 + 7 + 7 + 7 = \boxed{4} \times 7 = \boxed{7} \times \boxed{4}$

c)  = $\boxed{4} \times \text{cube} = \text{cube} \times \boxed{4}$

d)

9	9	9	9	9
---	---	---	---	---

$9 + 9 + 9 + 9 + 9 = \boxed{5} \times \boxed{9} = \boxed{9} \times \boxed{5}$

e)

c	c	c	c	c
---	---	---	---	---

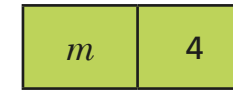
$c + c + c + c + c = \boxed{5} \times c = \boxed{c} \times \boxed{5}$

f)

d	d	d	d
---	---	---	---

$d + d + d + d = \boxed{4} \times \boxed{d} = \boxed{d} \times \boxed{4}$

2 Which one of these bar models represents $4m$? Tick your answer.


☐

☐

☒

What do the other bar models represent? Explain your answer.

$m + 4$ (4 more than m)

$4 + m$ (m more than 4)

3 Circle the calculations that are correct.

$a + a = a^2$

$a + a = 2a$

$a + a = a^2$

Draw diagrams to support your answer.



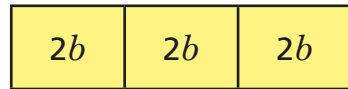
$a + a = 2a$

a^2 means the same so is equivalent but isn't the proper way of writing it.





- 4 a) Explain why this bar model shows $2b \times 3$



- b) Use the bar model to complete the calculation.

$$2b \times 3 = \boxed{2b} + \boxed{2b} + \boxed{2b} = \boxed{6b}$$

- 5 Complete these expressions without using an operation.

a) $3 \times g = \boxed{3}g$

g) $k \times k = \boxed{k^2}$

b) $g + g + g = \boxed{3}g$

h) $5d \times 2 = \boxed{10}d$

c) $h \div 3 = \boxed{\frac{h}{3}}$

i) $7 \times 3a = \boxed{21a}$

d) $3 \div h = \boxed{\frac{3}{h}}$

j) $4c \times 5 = \boxed{20c}$

e) $y \times 7 = \boxed{7y}$

k) $5 \times a \times a = \boxed{5a^2}$

f) $j \times k = \boxed{jk}$

l) $4 \times 3 \times r = \boxed{12r}$

- 6 Explain what these expressions mean.

a) $2m$ $2 \times m$

b) $\frac{m}{2}$ $m \div 2$

c) m^2 $m \times m$

d) $\frac{2}{m}$ $2 \div m$

e) gh $g \times h$

f) $\frac{h}{g}$ $h \div g$

- 7 Write expressions for these statements.

a) m divided by 7 $\boxed{\frac{m}{7}}$

d) t squared $\boxed{t^2}$

b) 3 multiplied by r $\boxed{3r}$

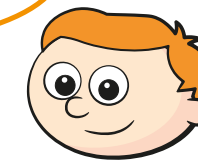
e) k divided by n $\boxed{\frac{k}{n}}$

c) p multiplied by 11 $\boxed{11p}$

f) p multiplied by 3 multiplied by y $\boxed{3py}$

8

xy is equivalent to yx .



Ron is correct. Explain why.

Multiplication is commutative.

$\frac{x}{y}$ is equivalent to $\frac{y}{x}$.



Do you agree? No

Explain your reasoning.

Division is not commutative.