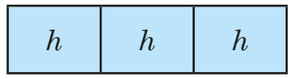
Substitute into single expressions

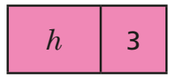
1 Substitute $h = 7$ into each of these expressions.

Use the bar models to help you.

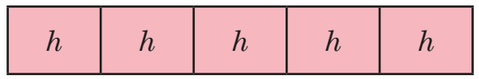
a) $3h =$ 21



b) $h + 3 =$ 10



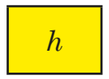
c) $5h =$ 35



d) $5 + h =$ 12

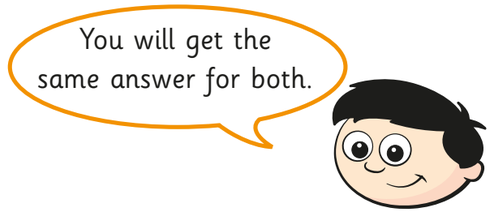
e) $h + 27 =$ 34

f) $\frac{h}{2} =$ 3·5



2 Dexter is substituting $y = 8$ into these expressions.

a) $y + 3$ $\quad$ $3 + y$



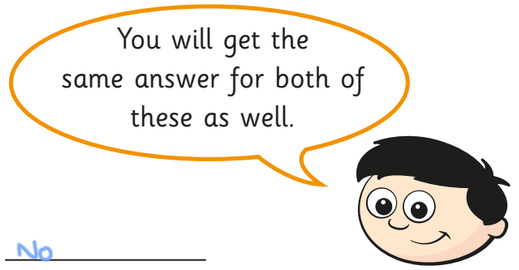
Do you agree with Dexter? Yes

Explain your answer.

Addition is commutative.

$8 + 3 = 3 + 8$

b) $\frac{y}{4}$ $\quad$ $\frac{4}{y}$



Do you agree with Dexter? No

Explain your answer.

Division is not commutative.

$\frac{8}{4} \neq \frac{4}{8}$

3 Rosie substitutes $g = 12$ into the expression $7 - g$.

Here is her working out.

$g = 12$

$7 - 12 = 5$

Explain why Rosie's answer is incorrect.

She has calculated 12 - 7 not 7 - 12

4 Substitute $p = 16$ into each of these expressions.

a) $p + 7 =$ 23

$p + 9.5 =$ 25.5

$6 + p =$ 22

$p + p =$ 32

b) $p - 3 =$ 13

$p - 20 =$ −4

$20 - p =$ 4

$p - p =$ 0

c) $4p =$ 64

$5p =$ 80

$3.9p =$ 62.4

$p^2 =$ 256

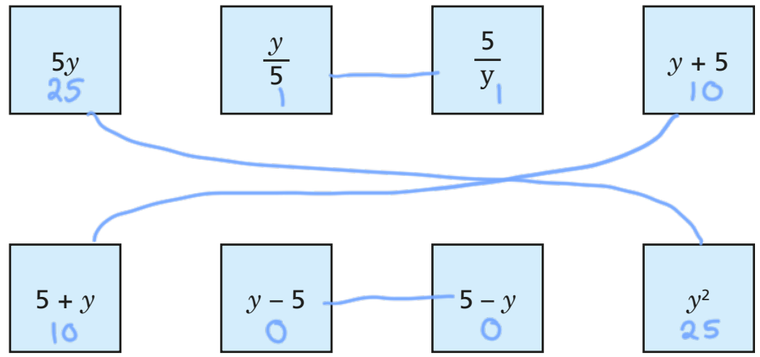
d) $\frac{p}{2} =$ 8

$\frac{p}{3.2} =$ 5

$\frac{40}{p} =$ 2.5

$\sqrt{p} =$ 4

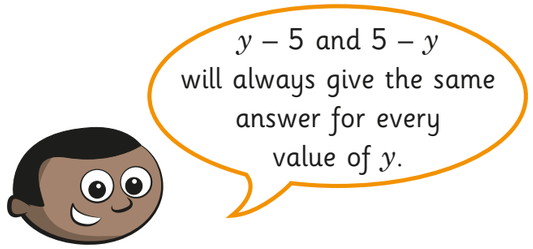
5 **a)** Match the expressions that will be equal when $y = 5$



b) Which cards will have the greatest value when $y = 1$?

y+5 and 5+y

c)



Give an example to show that Mo is wrong.

If y = 1, y − 5 = −4 and 5 − y = 4

−4 ≠ 4

d) Which of the expressions will always be equal, whatever the value of y?

5+y and y+5