

Substitute into 2-step expressions

1 Substitute $y = 6$ into each of these expressions.

a) $3y + 2 =$

y	y	y	2
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b) $3(y + 2) =$

y	2
y	2
y	2

c) $8 + 2y =$

8	y	y
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d) $2(4 + y) =$

4	y
4	y

2 Jack is substituting $g = 3$ into these expressions.

$4g + 5$

$4(g + 5)$

I will get the same answer for both as I just need to multiply g by 4 and add on 5



Draw a function machine for each expression to show why Jack is incorrect.

3 Evaluate the expressions when $z = 6$

a) $3z + 7 =$

c) $4 + z =$

$2z - 5 =$

$4 + 3z =$

$10z + 6.3 =$

$20 - 2z =$

b) $3(z + 7) =$

d) $\frac{z - 1}{5} =$

$2(z - 5) =$

$\frac{z}{3} + 2 =$

$10(z + 5.3) =$

$3 + \frac{z}{2} =$

- 4 Dora has evaluated the expression $4x^2$ when $x = 3$

$$4 \times 3 = 12$$
$$12^2 = 144$$

Dora has made a mistake.

- a) What calculation should Dora have completed first?
Correct her working out.

- b) What would the expression need, for the answer 144 to be correct?

- c) Work out the value of these expressions when $x = 5$

$2x^2$	
$(2x)^2$	
$4x^2$	
$(4x)^2$	



- 5 Use a calculator to evaluate these expressions when $k = 16$ and $m = 0.5$

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|--------------------|--|-----------------|--|
| a) $k + m =$ | | h) $m(k - 8) =$ | |
| b) $k - m =$ | | i) $m(8 - k) =$ | |
| c) $m - k =$ | | j) $k^2 =$ | |
| d) $\frac{k}{m} =$ | | k) $3k^2 =$ | |
| e) $\frac{m}{k} =$ | | l) $(3k)^2 =$ | |
| f) $mk =$ | | m) $k^m =$ | |
| g) $3k - 7m =$ | | n) $4k^m =$ | |

- 6 Substitute different values of m in to each of these expressions.

$5m + 1$	$5(m + 1)$	$5m + 5$
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- a) Explain why for any value of m , the second and third expressions will always be equal.

- b) Explain why for any value of m , the second expression will always be 4 more than the first.

