

21. [Substitution]

Skill 21.1 Substituting one value into expressions involving + and -

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Replace the letter (variable) with the given value.
- Add (+) and/or subtract (-) from left to right.

Q. If $a = 5$, find the value of $13 - a$

A. $13 - a$ — substitute $a = 5$
 $= 13 - 5$
 $= 8$

a) If $p = 2$, find the value of $5 + p$

$$= 5 + 2 = \boxed{7}$$

b) If $f = 3$, find the value of $6 + f$

$$= \dots = \boxed{\quad}$$

c) If $c = 4$, find the value of $4 + c$

$$= \dots = \boxed{\quad}$$

d) If $m = 5$, find the value of $m + 3$

$$= \dots = \boxed{\quad}$$

e) If $g = 7$, find the value of $g + 2$

$$= \dots = \boxed{\quad}$$

f) If $z = 6$, find the value of $z + 1$

$$= \dots = \boxed{\quad}$$

g) If $x = 3$, find the value of $x + x$

$$= \dots = \boxed{\quad}$$

h) If $v = 4$, find the value of $v + v$

$$= \dots = \boxed{\quad}$$

i) If $q = 7$, find the value of $q + q$

$$= \dots = \boxed{\quad}$$

j) If $t = 5$, find the value of $t + t + t$

$$= \dots = \boxed{\quad}$$

k) If $e = 6$, find the value of $e + e + e$

$$= \dots = \boxed{\quad}$$

l) If $p = 8$, find the value of $p + p + p$

$$= \dots = \boxed{\quad}$$

m) If $j = 9$, find the value of $j + j - 8$

$$= \dots = \boxed{\quad}$$

n) If $k = 7$, find the value of $k + k + 6$

$$= \dots = \boxed{\quad}$$

o) If $h = 8$, find the value of $4 + h + h$

$$= \dots = \boxed{\quad}$$

p) If $m = 8$, find the value of $m + m - 9$

$$= \dots = \boxed{\quad}$$

q) If $s = 6$, find the value of $9 + s + s$

$$= \dots = \boxed{\quad}$$

r) If $n = 5$, find the value of $8 + n + n$

$$= \dots = \boxed{\quad}$$

Skill 21.2 Substituting one value into expressions involving \times and \div

MM4.2 1 2 3 4
MM5.1 1 2 3 4

- Replace the letter (variable) with the given value.
- Multiply (\times) and/or divide (\div) from left to right.

Q. If $m = 4$, find the value of $6m$

A. $6m$ *— substitute $m = 4$*
 $= 6 \times 4$
 $= 24$

a) If $a = 6$, find the value of $9 \times a$

$$= 9 \times 6 = \boxed{54}$$

b) If $n = 4$, find the value of $3 \times n$

$$= \quad = \boxed{}$$

c) If $y = 5$, find the value of $2 \times y$

$$= \quad = \boxed{}$$

d) If $w = 7$, find the value of $w \times 3$

$$= \quad = \boxed{}$$

e) If $p = 8$, find the value of $4 \times p$

$$= \quad = \boxed{}$$

f) If $z = 6$, find the value of $7 \times z$

$$= \quad = \boxed{}$$

g) If $a = 3$, find the value of $8a$

$$= \quad = \boxed{}$$

h) If $h = 2$, find the value of $9h$

$$= \quad = \boxed{}$$

i) If $n = 5$, find the value of $7n$

$$= \quad = \boxed{}$$

j) If $m = 32$, find the value of $m \div 4$

$$= \quad = \boxed{}$$

k) If $n = 7$, find the value of $42 \div n$

$$= \quad = \boxed{}$$

l) If $k = 3$, find the value of $36 \div k$

$$= \quad = \boxed{}$$

m) If $d = 9$, find the value of $81 \div d$

$$= \quad = \boxed{}$$

n) If $p = 8$, find the value of $64 \div p$

$$= \quad = \boxed{}$$

o) If $i = 6$, find the value of $42 \div i$

$$= \quad = \boxed{}$$

p) If $m = 7$, find the value of $56 \div m$

$$= \quad = \boxed{}$$

q) If $e = 20$, find the value of $\frac{e}{5}$

$$= \quad = \boxed{}$$

r) If $w = 9$, find the value of $\frac{108}{w}$

$$= \quad = \boxed{}$$

Skill 21.3 Substituting one value into expressions involving +, -, × and ÷

MM4.2 1 2 3 3 4
MM5.1 1 2 2 3 3 4

- Replace the letter (variable) with the given value.
- First multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (-) from left to right.

Q. If $q = 8$, find the value of $4q + 2$

$$\begin{aligned} \mathbf{A.} \quad & 4q + 2 \xrightarrow{\text{substitute } q = 8} \\ & = 4 \times 8 + 2 \\ & = 32 + 2 \\ & = 34 \end{aligned}$$

a) If $w = 6$, find the value of $20 - 3w$

$$\begin{aligned} &= 20 - 3 \times 6 \xrightarrow{\text{Do } \times \text{ first}} \\ &= 20 - 18 \quad = \boxed{2} \end{aligned}$$

b) If $x = 2$, find the value of $5x + 1$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

c) If $m = 3$, find the value of $2 + 3m$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

d) If $x = 5$, find the value of $12 + 5x$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

e) If $a = 4$, find the value of $6 + 4a$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

f) If $b = 7$, find the value of $2b + 9$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

g) If $s = 3$, find the value of $7 + 11s$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

h) If $v = 4$, find the value of $9v - 8$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

i) If $h = 4$, find the value of $3h - 7$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

j) If $k = 7$, find the value of $35 - 4k$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

k) If $w = 2$, find the value of $8w - 5$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

l) If $u = 5$, find the value of $21 - 3u$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

m) If $e = 9$, find the value of $\frac{e+15}{8}$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

n) If $s = 3$, find the value of $\frac{s+4}{7}$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

o) If $c = 3$, find the value of $\frac{19-c}{4}$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

Skill 21.4 Substituting negative values into expressions.

MM4.2 1 1 2 3 3 4 4
MM5.1 1 2 2 3 3 4 4

- Replace the letter (variable) with the given value.
- First multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (−) from left to right.
- Determine the sign of the result. (see skills 13.7 to 13.10, pages 104 to 107)

Q. If $z = -5$,
find the value of
 $z - 9$

A.
$$\begin{aligned} z - 9 &\quad \text{substitute } z = -5 \\ &= -5 - 9 \\ &= -14 \end{aligned}$$

a) If $e = -12$, find the
value of $19 + e$

$$= 19 + (-12) = \boxed{7}$$

b) If $y = -3$, find the
value of $9y$

$$= \dots = \boxed{}$$

c) If $r = -2$, find the
value of $6r$

$$= \dots = \boxed{}$$

d) If $n = -7$, find the
value of $n + 8$

$$= \dots = \boxed{}$$

e) If $z = -9$, find the
value of $4 - z$

$$= \dots = \boxed{}$$

f) If $h = -6$, find the
value of $8 + h$

$$= \dots = \boxed{}$$

g) If $j = -2$, find the
value of $8 - j$

$$= \dots = \boxed{}$$

h) If $v = -8$, find the
value of $v - 5$

$$= \dots = \boxed{}$$

i) If $b = -5$, find the
value of $7 + b$

$$= \dots = \boxed{}$$

j) If $b = -9$, find the
value of $4b$

$$= \dots = \boxed{}$$

k) If $f = -3$, find the
value of $-7f$

$$= \dots = \boxed{}$$

l) If $i = -6$, find the
value of $-5i$

$$= \dots = \boxed{}$$

m) If $a = -12$, find the
value of $\frac{a}{4}$

$$= \dots = \boxed{}$$

n) If $e = -21$, find the
value of $\frac{e}{3}$

$$= \dots = \boxed{}$$

o) If $c = -32$, find the
value of $\frac{c}{8}$

$$= \dots = \boxed{}$$

p) If $s = -4$, find the
value of $2 + 3s$

$$= \dots = \boxed{}$$

q) If $q = -3$, find the
value of $7q - 5$

$$= \dots = \boxed{}$$

r) If $x = -9$, find the
value of $5 - 2x$

$$= \dots = \boxed{}$$

Skill 21.5 Substituting two values into expressions involving + and -

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Substitute each letter (variable) with the given value.
- Add (+) and/or subtract (-) from left to right.
- Determine the sign of the result. (see skills 13.7 to 13.10, pages 104 to 107)

Q. If $h = 5$ and $i = -12$,
find the value of $h + i$

A.
$$\begin{aligned} h + i & \quad \text{— substitute } h = 5 \text{ and } i = -12 \\ &= 5 + (-12) \\ &= -7 \end{aligned}$$

a) If $s = 9$ and $t = 8$,
find the value of $s + t$

$$= 9 + 8 = \boxed{17}$$

b) If $m = 3$ and $n = 7$,
find the value of $m + n$

$$= \dots = \boxed{}$$

c) If $i = 10$ and $j = 4$,
find the value of $i + j$

$$= \dots = \boxed{}$$

d) If $y = 0$ and $z = 12$,
find the value of $y + z$

$$= \dots = \boxed{}$$

e) If $k = 14$ and $l = 6$,
find the value of $k - l$

$$= \dots = \boxed{}$$

f) If $g = 13$ and $h = 7$,
find the value of $g - h$

$$= \dots = \boxed{}$$

g) If $p = 13$ and $q = 11$,
find the value of $p + q$

$$= \dots = \boxed{}$$

h) If $n = 5$ and $o = 8$,
find the value of $n - o$

$$= \dots = \boxed{}$$

i) If $a = 6$ and $b = 14$,
find the value of $a - b$

$$= \dots = \boxed{}$$

j) If $h = 5$ and $i = -12$,
find the value of $h + i$

$$= \dots = \boxed{}$$

k) If $v = -8$ and $w = 9$,
find the value of $v - w$

$$= \dots = \boxed{}$$

l) If $f = -7$ and $g = 3$,
find the value of $f - g$

$$= \dots = \boxed{}$$

m) If $r = 2$ and $s = -11$,
find the value of $r - s$

$$= \dots = \boxed{}$$

n) If $a = -5$ and $b = 7$,
find the value of $a - b$

$$= \dots = \boxed{}$$

o) If $q = 6$ and $r = -16$,
find the value of $q + r$

$$= \dots = \boxed{}$$

p) If $t = 0$ and $u = 6$,
find the value of $t - u$

$$= \dots = \boxed{}$$

q) If $v = -14$ and $w = 8$,
find the value of $v + w$

$$= \dots = \boxed{}$$

r) If $w = 7$ and $x = -9$,
find the value of $w - x$

$$= \dots = \boxed{}$$

Skill 21.6 Substituting two values into expressions involving x and \div

MM4.2 11 22 33 44
MM5.1 11 22 33 44

- Substitute each letter (variable) with the given value.
- Multiply (\times) and/or divide (\div) from left to right.
- Determine the sign of the result. (see skills 13.7 to 13.10, pages 104 to 107)

Q. If $q = 6$ and $r = 8$,
find the value of qr

A. qr — substitute $q = 6$ and $r = 8$
 $= 6 \times 8$
 $= 48$

a) If $e = 3$ and $f = 7$,
find the value of $e \times f$

$$= 3 \times 7 = \boxed{21}$$

b) If $n = 4$ and $o = 2$,
find the value of $n \times o$

$$= \dots = \boxed{\quad}$$

c) If $b = 10$ and $c = 3$,
find the value of $b \times c$

$$= \dots = \boxed{\quad}$$

d) If $y = 2$ and $z = 9$,
find the value of yz

$$= \dots = \boxed{\quad}$$

e) If $g = 11$ and $h = 4$,
find the value of gh

$$= \dots = \boxed{\quad}$$

f) If $l = 3$ and $m = 13$,
find the value of lm

$$= \dots = \boxed{\quad}$$

g) If $s = 5$ and $t = 6$,
find the value of st

$$= \dots = \boxed{\quad}$$

h) If $w = 5$ and $x = 8$,
find the value of wx

$$= \dots = \boxed{\quad}$$

i) If $d = 7$ and $e = 0$,
find the value of de

$$= \dots = \boxed{\quad}$$

j) If $w = 30$ and $x = 5$,
find the value of $w \div x$

$$= \dots = \boxed{\quad}$$

k) If $v = 45$ and $w = 9$,
find the value of $v \div w$

$$= \dots = \boxed{\quad}$$

l) If $u = 22$ and $v = -2$,
find the value of $u \div v$

$$= \dots = \boxed{\quad}$$

m) If $a = 54$ and $b = 6$, find
the value of $\frac{a}{b}$

$$= \dots = \boxed{\quad}$$

n) If $c = 72$ and $d = 9$, find
the value of $\frac{c}{d}$

$$= \dots = \boxed{\quad}$$

o) If $k = 63$ and $l = 7$, find
the value of $\frac{k}{l}$

$$= \dots = \boxed{\quad}$$

p) If $l = 0$ and $m = 14$,
find the value of $9lm$

$$= \dots = \boxed{\quad}$$

q) If $k = 4$ and $l = -2$,
find the value of $8kl$

$$= \dots = \boxed{\quad}$$

r) If $d = 5$ and $e = 3$,
find the value of $7de$

$$= \dots = \boxed{\quad}$$

Skill 21.7 Substituting two values into expressions involving +, -, × and ÷

MM4.2 11 22 33 44
MM5.1 11 22 33 44

- Substitute each letter (variable) with the given value.
- First multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (-) from left to right.
- Determine the sign of the result. (see skills 13.7 to 13.10, pages 104 to 107)

Q. If $m = 8$ and $n = 9$,
find the value of
 $m - 5 - n$

A. $m - 5 - n$ → substitute $m = 8$ and $n = 9$
 $= 8 - 5 - 9$
 $= 3 - 9$
 $= -6$

a) If $t = 6$ and $u = 7$,
find the value of
 $2t + u$

$$= 2 \times 6 + 7$$

→ Do \times first

$$= 12 + 7 = \boxed{19}$$

b) If $d = 8$ and $e = 3$,
find the value of
 $16 - d + e$

$$= \dots$$

$$= \boxed{} = \boxed{}$$

c) If $h = 3$ and $i = 7$,
find the value of
 $11 + h - i$

$$= \dots$$

$$= \boxed{} = \boxed{}$$

d) If $i = 5$ and $j = 6$,
find the value of
 $3ij$

$$= \dots = \boxed{}$$

e) If $a = 3$ and $b = 0$,
find the value of
 $8ab$

$$= \dots = \boxed{}$$

f) If $m = 4$ and $n = 1$,
find the value of
 $3m - n$

$$= \dots = \boxed{}$$

g) If $m = 3$ and $n = 2$,
find the value of
 $4m - 2n$

$$= \dots = \boxed{}$$

h) If $b = 7$ and $c = -5$,
find the value of
 $2bc + 30$

$$= \dots = \boxed{}$$

i) If $g = 2$ and $h = 9$,
find the value of
 $-2gh + 2h$

$$= \dots = \boxed{}$$

j) If $a = 6$ and $b = 3$,
find the value of
 $-4a + 5b$

$$= \dots = \boxed{}$$

k) If $y = 3$ and $z = 2$,
find the value of
 $\frac{9-y}{z}$

$$= \dots = \boxed{}$$

l) If $g = -2$ and $h = 15$,
find the value of
 $\frac{h-7}{g}$

$$= \dots = \boxed{}$$

Skill 21.8 Substituting into formulae.

MM4.2 11 22 33 44
MM5.1 11 22 33 44

- Substitute each letter (variable) with the given value.
- First evaluate all powers.
- Then multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (-) from left to right.

Q. Use $A = lw$ to find the area (A) of a rectangle where $l = 3$ and $w = 7$

$$\mathbf{A.} \quad A = lw \quad \text{substitute } l = 3 \text{ and } w = 7$$

$$= 3 \times 7$$

$$= 21$$

a) Use $F = ma$ to find the force (F) where $m = 5$ and $m = 11$

$$F = 5 \times 11 \quad = \boxed{55}$$

b) Use $P = 5l$ to find the perimeter (P) of a regular pentagon where $l = 12$

$$= \boxed{}$$

c) Use $V = Bh$ to find the volume (V) of a prism where $B = 12$ and $h = 4$

$$= \boxed{}$$

d) Use $A = l^2$ to find the area (A) of a square where $l = 9$

$$= \boxed{}$$

e) Use $A = \frac{ab}{2}$ to find the area (A) of a kite where $a = 8$ and $b = 7$

$$= \boxed{}$$

f) Use $d = vt$ to find the distance (d) where $v = 95$ and $t = 2$

$$= \boxed{}$$

g) Use $A = bh$ to find the area (A) of a parallelogram where $b = 4.5$ and $h = 4$

$$= \boxed{}$$

h) Use $P = 8l$ to find the perimeter (P) of an octagon where $l = 2.5$

$$= \boxed{}$$

i) Use $A = \frac{1}{2} h(a + b)$ to find the area (A) of a trapezium where $h = 4$, $a = 7$ and $b = 3$

$$= \boxed{}$$

j) Use $V = l^2h$ to find the volume (V) of a square prism where $l = 5$ and $h = 4$

$$= \boxed{}$$

k) Use $V = l^3$ to find the volume (V) of a cube where $l = 5$

$$= \boxed{}$$

l) Use $A = \pi r^2$ to find the area (A) of a circle where $\pi \approx 3.14$ and $r = 10$

$$= \boxed{}$$

Skill 21.9 Substituting into expressions involving powers.

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Substitute each letter (variable) with the given value.
- First evaluate all powers.
- Then multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (-) from left to right.

- Q.** If $i = 4$,
find the value of
 $2i^2 - i$

A. $2i^2 - i$ → substitute $i = 4$
 $= 2(4 \times 4) - 4$
 $= 2 \times 16 - 4$
 $= 32 - 4$
 $= 28$

- a) If $x = 5$,
find the value of
 $40 - x^2$

$$\begin{aligned} &= 40 - 5 \times 5 \text{ → multiply first} \\ &= 40 - 25 \quad = \boxed{15} \end{aligned}$$

- b) If $j = 8$,
find the value of
 j^2

$$= \quad = \boxed{}$$

- c) If $m = 3$,
find the value of
 $8 + m^2$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- d) If $c = 5$,
find the value of
 $4c^2$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- e) If $d = 7$,
find the value of
 $d^2 - 9$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- f) If $k = 4$,
find the value of
 $23 - k^2$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- g) If $z = 6$,
find the value of
 $2z^2 - 32$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- h) If $y = 10$,
find the value of
 $2y^2 + y$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- i) If $b = 4$,
find the value of
 $3b^2 + 7$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- j) If $t = 3$,
find the value of
 $4t^2 + t$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- k) If $e = 7$,
find the value of
 $-2e^2$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- l) If $n = 6$,
find the value of
 $\frac{n^2 - 6}{5}$

$$\begin{aligned} &= \dots \dots \dots \\ &= \quad = \boxed{} \end{aligned}$$

- Substitute each letter (variable) with the given value.
- First evaluate inside the brackets.
- Then multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (−) from left to right.
- Determine the sign of the result. (see skills 13.7 to 13.10, pages 104 to 107)

Q. If $r = 5$, find the value of $4(r - 2)$

A. $4(r - 2)$ → substitute $r = 5$
 $= 4(5 - 2)$
 $= 4 \times 3$
 $= 12$

a) If $h = 2$, find the value of $3(5 + h)$

$$\begin{aligned} &= 3(5 + 2) \quad \text{Do () first} \\ &= 3 \times 7 \quad = \boxed{21} \end{aligned}$$

b) If $z = 6$, find the value of $4(12 - z)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

c) If $s = 3$, find the value of $s(7 + s)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

d) If $a = 7$, find the value of $5(a + 5)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

e) If $r = 5$, find the value of $4(r - 2)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

f) If $r = 9$, find the value of $r(2 + r)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

g) If $q = 2$, find the value of $9(q + 8)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

h) If $k = 4$, find the value of $k(k - 8)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

i) If $h = -5$, find the value of $4(h - 2)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

j) If $f = 9$, find the value of $6(f + 6)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

k) If $p = 6$, find the value of $p(2 - p)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

l) If $m = 7$, find the value of $m(m - 2)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

m) If $g = -2$, find the value of $2(g + 3)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

n) If $h = -1$, find the value of $h(2 - h)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

o) If $e = -2$, find the value of $e(e - 7)$

$$\begin{aligned} &= \dots \dots \dots \\ &= \dots \dots \dots = \boxed{} \end{aligned}$$

Skill 21.11 Substituting into more complex expressions.

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Substitute each letter (variable) with the given value.
- First evaluate all powers.
- Then evaluate inside the brackets.
- Then multiply (\times) and/or divide (\div) from left to right.
- Finally add (+) and/or subtract (-) from left to right.

- Q.** If $a = 6$ and $b = 3$, find the value of $a^2 - ab$

A.
$$\begin{aligned} a^2 - ab & \quad \text{— substitute } a = 6 \text{ and } b = 3 \\ &= 6^2 - 6 \times 3 \\ &= 36 - 18 \\ &= 18 \end{aligned}$$

- a)** If $x = 4$ and $y = 1$, find the value of $x(x + y)$

Do () first

$$\begin{aligned} &= 4(4 + 1) \\ &= 4 \times 5 \end{aligned}$$

$=$ 20

- b)** If $c = 7$ and $d = 4$, find the value of $c(d + c)$

$=$

- c)** If $g = 9$ and $h = 5$, find the value of $h(g + h)$

$=$

- d)** If $p = 8$ and $q = 6$, find the value of $3p(p - q)$

$=$

$=$

- e)** If $m = 3$ and $n = 6$, find the value of $2n(n - m)$

$=$

$=$

- f)** If $e = 5$ and $f = 1$, find the value of $2e(e - f)$

$=$

$=$

- g)** If $j = 2$ and $k = 12$, find the value of $j^2 + jk$

$=$

$=$

- h)** If $s = 7$ and $t = 4$, find the value of $s^2 - st$

$=$

$=$

- i)** If $u = 3$ and $v = 8$, find the value of $v^2 - uv$

$=$

$=$

- j)** If $l = 10$ and $m = 5$, find the value of $3l - m^2$

$=$

$=$

- k)** If $r = 6$ and $s = 20$, find the value of $2s - r^2$

$=$

$=$

- l)** If $w = 22$ and $x = 4$, find the value of $2w - x^2$

$=$

$=$

