

Rautaki Whakarea

TE WĀWĀHI TAU WHAKAREA

4
5
6
7
8

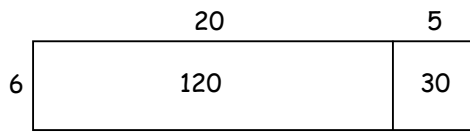
E ako ana ahau ki te whakarea tauoti mati-maha.

Hei Mahi 1: Te Whakaatu Whakareatanga Ki Te Tapawhā Hāngai

Hei tauira:

$$25 \times 6 = \square$$

Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, me te wāwāhinga o te 25.



$$\begin{aligned}
 \text{Nō reira, } \square &= (6 \times 20) + (6 \times 5) \\
 &= 120 + 30 \\
 &= 150
 \end{aligned}$$

Ngā tohutohu:

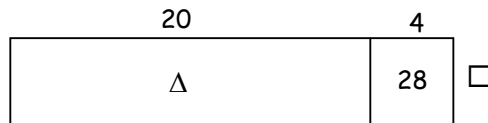
- 1) Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, pēnei i te mea o runga ake nei. Tuhia ngā tau katoa ki te tapawhā hāngai.
- 2) Whakaotia te whakareatanga. Kia pēnei i te tauira o runga ake nei tō tuhituhi i te whārite.

- | | | | |
|----------------------------|------------------------------|-----------------------------|-----------------------------|
| 1) $13 \times 4 = \square$ | (2) $17 \times 6 = \square$ | (3) $19 \times 7 = \square$ | (4) $22 \times 3 = \square$ |
| 5) $31 \times 9 = \square$ | (6) $4 \times 16 = \square$ | (7) $5 \times 17 = \square$ | (8) $8 \times 36 = \square$ |
| 9) $7 \times 44 = \square$ | (10) $7 \times 43 = \square$ | | |

Hei Mahi 2: Te Whiriwhiri I Ngā Tau Whakarea

Hei tauira:

Whiriwhiria te uara o te \square me te Δ i tēnei pikitia. Tuhia te whakareatanga, ka whakaoti ai.



$$\begin{aligned}
 \square &= 7, \text{ nō reira } \Delta = 140, \text{ nō reira koia nei te whārite:} \\
 24 \times 7 &= 140 + 28 \\
 &= 168
 \end{aligned}$$

Ngā tohutohu:

Whiriwhiria te uara o te \square me te Δ i ēnei pikitia. Tuhia te whakareatanga, ka whakaoti ai. Kia pēnei i te taura o runga ake nei tō tuhituhi i te whārite.

1)

Δ	21
----------	----

 \square

(6)

24	400
----	-----

 Δ

2)

Δ	20
----------	----

 \square

(7)

360	54
-----	----

 Δ

3)

90	\square
----	-----------

 9

(8)

\square	36
-----------	----

 4

4)

\square	120
-----------	-----

 6

(9)

\square	16
-----------	----

 8

5)

\square	280
-----------	-----

 7

(10)

6	180
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 2

Hei Mahi 3: Te Whiriwhiri I Ngā Tau Whakarea

Hei taura:

Whiriwhiria te uara o te \square me te Δ i tēnei pikitia, tuhia te whakareatanga, ka whakaoti ai.

\square	7	
160	28	Δ

$\Delta = 4$, nō reira $\square = 40$, nō reira koia nei te whārite:

$47 \times 4 = 188$

Ngā tohutohu:

Whiriwhiria te uara o te \square me te Δ i ēnei pikitia. Tuhia te whakareatanga, ka whakaoti ai. Kia pēnei i te taura o runga ake nei tō tuhituhi i te whārite.

1)

120	28
-----	----

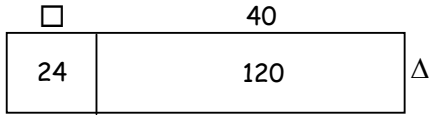
 Δ

(2)

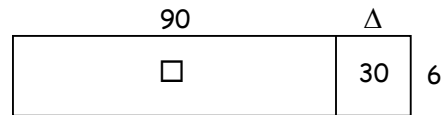
300	12
-----	----

 Δ

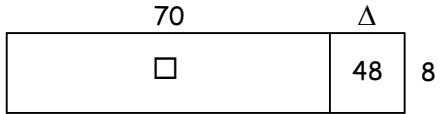
3)



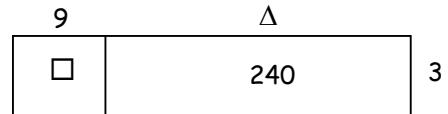
(4)



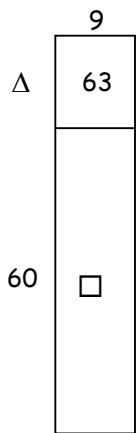
5)



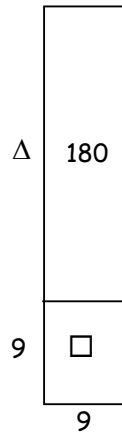
(6)



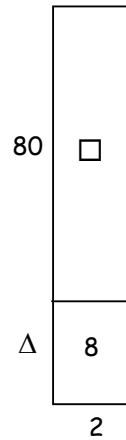
7)



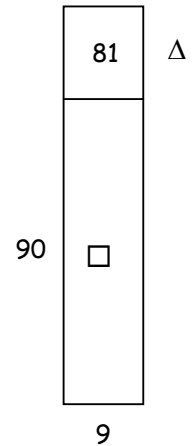
(8)



(9)



(10)



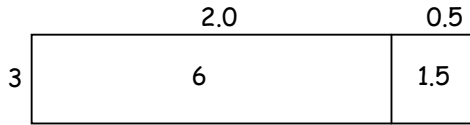
11) Tuhia āu ake rapanga e toru, pēnei i ngā rapanga o runga ake nei.

Hei Mahi 4: Te Whakareā Hautau ā-Ira

Hei tauira:

$$2.5 \times 3 = \square$$

Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, me te wāwāhinga o te 2.5



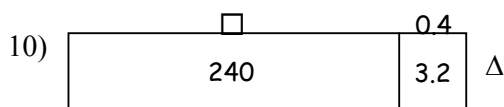
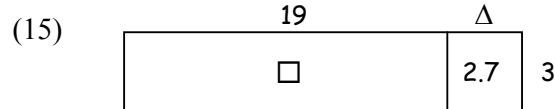
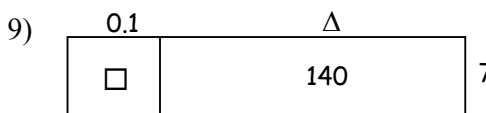
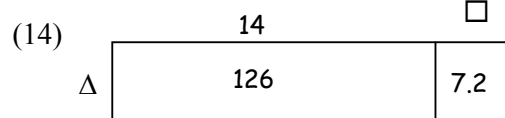
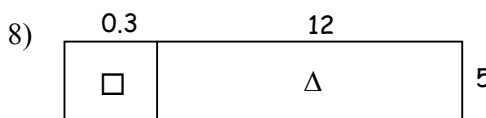
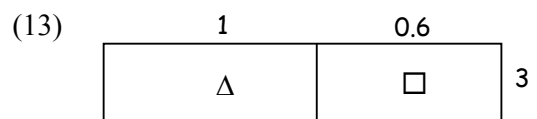
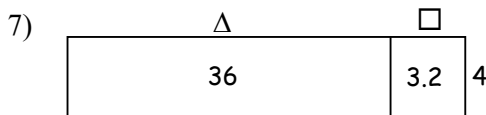
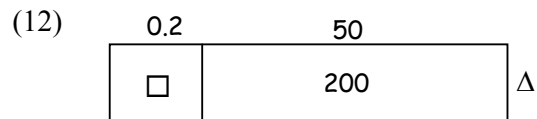
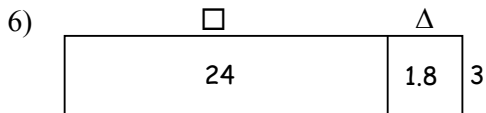
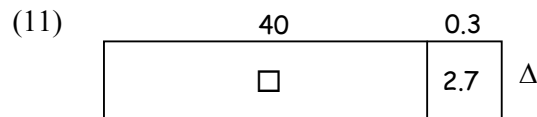
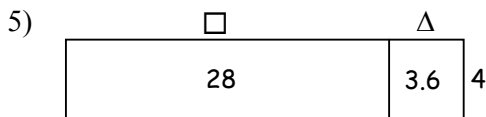
$$\begin{aligned} \text{nō reira, } \square &= (3 \times 2) + (3 \times 0.5) \\ &= 6 + 1.5 \\ &= 7.5 \end{aligned}$$

Ngā tohutohu:

- 1) Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, pēnei i te tauira o runga ake nei. Tuhia ngā tau katoa ki te tapawhā hāngai.
- 2) Whakaotia te whakareatanga, kia pēnei i te tauira o runga ake nei tō tuhituhi i te whārite.

1) $1.7 \times 3 = \square$ (2) $4.8 \times 4 = \square$ (3) $5.6 \times 7 = \square$ (4) $12.7 \times 9 = \square$

Whiriwhiria te uara o te \square me te Δ i ngā pikitia e whai ake nei. Tuhia te whakareatanga, ka whakaoti ai.



(16) Tuhia āu ake rapanga e toru.

Hei Mahi 5: Te Wāwāhi Tapawhā Hāngai Hei Whakaatu Whakareatanga

Hei taurira:

$$57 \times 34 = \square$$

Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, me ngā wāwāhinga o ngā tau whakarea.

	50	7	
	1500	210	30
	200	28	4

$$\begin{aligned}\square &= (50 \times 30) + (7 \times 30) + (50 \times 4) + (7 \times 4) \\ &= 1500 + 210 + 200 + 28 \\ &= 1938\end{aligned}$$

Ngā tohutohu:

- 1) Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, pēnei i te taurira o runga ake nei. Tuhia ngā tau katoa ki te tapawhā hāngai.
- 2) Whakaotia te whakareatanga, kia pēnei i te taurira o runga ake nei tō tuhituhi i te whārite.

- 1) $28 \times 62 = \square$ (2) $32 \times 41 = \square$ (3) $17 \times 56 = \square$ (4) $25 \times 37 = \square$
- 5) $14 \times 92 = \square$ (6) $87 \times 63 = \square$ (7) $74 \times 33 = \square$ (8) $55 \times 55 = \square$
- 9) $72 \times 86 = \square$ (10) $97 \times 79 = \square$

Hei Mahi 6: Te Whakarea I Te Tauoti Me Te Hautau ā-Ira

Hei tauira:

$$5.7 \times 34 = \square$$

Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, me ngā wāwāhinga o ngā tau whakarea.

	5	0.7	
	150	21	30
	20	2.8	4

$$\begin{aligned}\square &= (5 \times 30) + (0.7 \times 30) + (5 \times 4) + (0.7 \times 4) \\ &= 150 + 21 + 20 + 2.8 \\ &= 193.8\end{aligned}$$

Ngā tohutohu:

- 1) Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, pēnei i te tauira o runga ake nei. Tuhia ngā tau katoa ki te tapawhā hāngai.
- 2) Whakaotia te whakareatanga, kia pēnei i te tauira o runga ake nei tō tuhituhi i te whārite.

- 1) $8.6 \times 16 = \square$ (2) $3.4 \times 34 = \square$ (3) $1.2 \times 21 = \square$ (4) $7.9 \times 86 = \square$
- 5) $6.4 \times 63 = \square$ (6) $57 \times 1.8 = \square$ (7) $61 \times 3.9 = \square$ (8) $17 \times 6.4 = \square$
- 9) $92 \times 7.8 = \square$ (10) $66 \times 6.6 = \square$

Hei Mahi 7: Te Whakarea I Te Tauoti Me Te Hautau ā-Ira

Hei tauira:

$$4.3 \times 8.1 = \square$$

Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, me ngā wāwāhinga o ngā tau whakarea.

	4	0.3
8	32	2.4
0.1	0.4	0.03

$$\begin{aligned}\square &= (4 \times 8) + (4 \times 0.1) + (0.3 \times 8) + (0.3 \times 0.1) \\ &= 32 + 0.4 + 2.4 + 0.03 \\ &= 34.83\end{aligned}$$

Ngā tohutohu:

- 1) Tuhia he tapawhā hāngai hei whakaatu i te whakareatanga, pēnei i te tauira o runga ake nei. Tuhia ngā tau katoa ki te tapawhā hāngai.
- 2) Whakaotia te whakareatanga, kia pēnei i te tauira o runga ake nei tō tuhituhi i te whārite.

- 1) $3.4 \times 5.7 = \square$ (2) $4.6 \times 8.1 = \square$ (3) $6.1 \times 9.1 = \square$ (4) $5.2 \times 3.4 = \square$
- 5) $6.8 \times 7.7 = \square$ (6) $9.2 \times 1.9 = \square$ (7) $4.7 \times 3.9 = \square$ (8) $8.8 \times 9.7 = \square$
- 9) $9.0 \times 8.6 = \square$ (10) $12.3 \times 3.3 = \square$

Hei Mahi 8: Te Whiriwhiri I Ngā Tau Whakarea

Hei taurira:

Whiriwhiria te uara o te \square me te Δ i tēnei pikitia, tuhia te whakareatanga, ka whakaoti ai.

8	Δ	
56	4.2	7
\square	0.12	0.2

$\Delta = 0.6$, nō reira $\square = 1.6$, nō reira koia nei te whārite:

$$8.6 \times 7.2 = 56 + 1.6 + 4.2 + 0.12$$

$$= 61.92$$

Hei taurira:

Whiriwhiria te uara o te \square me te Δ i tēnei pikitia, tuhia te whakareatanga, ka whakaoti ai.

1)

8	Δ	
56	1.4	7
\square	0.06	0.3

(2)

8	Δ	
0.4	3.2	0.08
6	\square	1.2

(3)

6	0.3	
Δ	0.6	0.03
4	\square	1.2

4)

1	0.8	
Δ	2	1.6
0.3	\square	0.24

(5)

6	0.7	
\square	4.9	7
3	0.35	Δ

(6)

9	Δ	
3	\square	1.2
0.6	5.4	0.24

7)

Δ	0.5	
36	3	6
1.8	\square	0.3

(8)

0.7	Δ	
8	5.6	72
0.4	\square	3.6

(9)

0.6	7	
3	1.8	\square
0.9	Δ	6.3

Hei Mahi 9: He Rapanga ā-Kupu

Ngā tohutohu

- 1) Tuhia he tapawhā hāngai hei whakaatu i te rapanga, me ngā wāwāhitanga e hāngai ana.
 - 2) Tuhia te whārite whakareatanga, ka whakaoti ai.
-
- 1) E 24 m te roa o te hōpua kauhoe. Ka oti i a Tama ngā roanga 13. Pēhea nei te tawhiti o tana kauhoe?
 - 2) 17 ngā tūnga motukā i te rārangi kotahi. Mēnā 13 ngā rārangi tūnga motukā, e hia katoa ngā tūnga?
 - 3) E \$87 te utu mō te mita whāriki wūru kotahi. E hia te utu mō te 13 m?
 - 4) E \$2.30 te utu ā-manokaramu mō te huakiwi. E hia te utu mō te 6 kg?
 - 5) E 3.2 kg te taumaha o te pouaka hua rākau kotahi. E hia manokaramu te taumaha o ngā pouaka 18?
 - 6) 18 ngā kēne pīni i te pouaka kotahi. E hia katoa ngā kēne i ngā pouaka 23?
 - 7) 1.6 mita te whānui o te whāriki wūru i hokona e Keita, 3.5 mita te roa. Pēhea nei te horahanga o te whāriki wūru?
 - 8) E 36 m te roa o te hōpua kauhoe. Ka oti i a Tama ngā roanga 28. Pēhea nei te tawhiti o tana kauhoe?
 - 9) E 49 ngā kakapa manawa o Hineora i te meneti kotahi. E hia ana kakapa manawa i ngā meneti 16?
 - 10) \$1.30 te utu ā-manokaramu mō te āporo. E hia te utu mō ngā manokaramu 7.8?
 - 11) Tuhia kia rua āu ake rapanga pēnei i ngā mea o runga ake nei.

Hei Mahi 10: Hei Tūhuratanga

E taea ana tēnei rautaki, arā, te whakaatu whakareatanga ki te tapawhā hāngai, hei whakaoti rapanga e whai wāhi mai ana te whakarea tau mati-3 (pērā i te 326×34)?

Hei Mahi 11: Te Taurangi

E 6 mā te 4 te tapawhā hāngai nei. Ko te 24 te horahanga.

$$4 \begin{array}{|c|} \hline 6 \\ \hline 6 \times 4 = 24 \\ \hline \end{array}$$

I tēnei tapawhā hāngai, kua tāpirihia te 30 ki ia tapa:

	30	6
30	900	180
4	120	24

Hei tātai i te horahanga o tēnei tapawhā hāngai:

$$(30 + 6) \times (30 + 4) = (30 \times 30) + (4 \times 30) + (30 \times 6) + (4 \times 6)$$

I tēnei tapawhā hāngai, kua tāpirihia te x ki ia tapa:

	x	6
x	x^2	$6x$
4	$4x$	24

Hei tātai i te horahanga o tēnei tapawhā hāngai:

Ka whakareatia te $(x + 6)$ ki te $(x + 4)$. Arā:

$$\begin{aligned} (x + 6)(x + 4) &= x^2 + 6x + 4x + 24 \\ &= x^2 + 10x + 24 \end{aligned}$$

Tuhia he tapawhā hāngai hei whakaatu i ngā whakareatanga e whai ake nei. Whakaaturia ngā tau whakarea ki ia tapa o te tapawhā hāngai. Tuhia te whārite, ka whakaoti ai, pēnei i te tauira o runga ake nei.

- 1) $(x + 4)(x + 2)$
- 2) $(x + 5)(x + 4)$
- 3) $(x + 2)(x + 9)$
- 4) $(x + 6)(x + 4)$
- 5) $(x + 8)(x + 2)$
- 6) $(x + 7)(x + 6)$
- 7) $(x + 5)(x + 3)$
- 8) $(x + 6)(x + 1)$
- 9) $(x + 4)(x + 4)$

10) $(x + 8)(x + 7)$

E taea ana e koe ēnei whakareatanga te whakaoti mēnā kāore e tuhia te tapawhā hāngai?

Rautaki Whakarea
TE WĀWĀHI TAU WHAKAREA
NGĀ OTINGA

Hei Mahi 1

1) $13 \times 4 = (10 \times 4) + (3 \times 4)$
 $= 40 + 12$
 $= 52$

	10	3
4	40	12

2) $17 \times 6 = (10 \times 6) + (6 \times 6)$
 $= 60 + 42$
 $= 102$

	10	7
6	60	42

3) $19 \times 7 = (10 \times 7) + (9 \times 7)$
 $= 70 + 63$
 $= 133$

	10	9
7	70	63

4) $22 \times 3 = (3 \times 20) + (2 \times 3)$
 $= 60 + 6$
 $= 66$

	20	2
3	60	6

5) $31 \times 9 = (9 \times 30) + (1 \times 9)$
 $= 270 + 9$
 $= 279$

	30	1
9	270	9

6) $4 \times 16 = (4 \times 10) + (4 \times 6)$
 $= 40 + 24$
 $= 64$

	10	6
4	40	24

7) $5 \times 17 = (5 \times 10) + (5 \times 7)$
 $= 50 + 35$
 $= 85$

	10	7
5	50	35

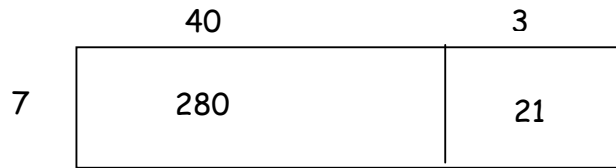
8) $8 \times 36 = (8 \times 30) + (8 \times 6)$
 $= 240 + 48$
 $= 288$

	30	6
8	240	48

$$\begin{aligned}
 9) \quad 7 \times 44 &= (7 \times 40) + (7 \times 4) \\
 &= 280 + 28 \\
 &= 308
 \end{aligned}$$



$$\begin{aligned}
 10) \quad 7 \times 43 &= (7 \times 40) + (7 \times 3) \\
 &= 280 + 21 \\
 &= 301
 \end{aligned}$$



Hei Mahi 2

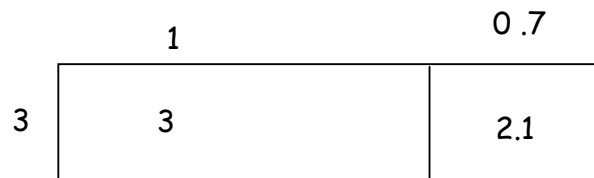
- | | | |
|-----|-------------------|-----------------|
| 1) | $\triangle = 60$ | $\square = 3$ |
| 2) | $\triangle = 150$ | $\square = 5$ |
| 3) | $\triangle = 10$ | $\square = 27$ |
| 4) | $\triangle = 20$ | $\square = 12$ |
| 5) | $\triangle = 40$ | $\square = 56$ |
| 6) | $\triangle = 8$ | $\square = 3$ |
| 7) | $\triangle = 6$ | $\square = 60$ |
| 8) | $\triangle = 9$ | $\square = 40$ |
| 9) | $\triangle = 8$ | $\square = 560$ |
| 10) | $\triangle = 90$ | $\square = 3$ |

Hei Mahi 3

- | | | | |
|-----|------------------|-----------------|---------------------|
| 1) | $\triangle = 4$ | $\square = 30$ | $37 \times 4 = 148$ |
| 2) | $\triangle = 6$ | $\square = 50$ | $52 \times 6 = 312$ |
| 3) | $\triangle = 3$ | $\square = 8$ | $48 \times 3 = 144$ |
| 4) | $\triangle = 5$ | $\square = 540$ | $95 \times 6 = 570$ |
| 5) | $\triangle = 6$ | $\square = 560$ | $76 \times 8 = 608$ |
| 6) | $\triangle = 80$ | $\square = 27$ | $89 \times 3 = 267$ |
| 7) | $\triangle = 7$ | $\square = 540$ | $67 \times 9 = 603$ |
| 8) | $\triangle = 20$ | $\square = 81$ | $29 \times 9 = 261$ |
| 9) | $\triangle = 4$ | $\square = 160$ | $84 \times 2 = 168$ |
| 10) | $\triangle = 9$ | $\square = 810$ | $99 \times 9 = 891$ |

Hei Mahi 4

$$\begin{aligned}
 1) \quad 1.7 \times 3 &= (1 \times 3) + (0.7 \times 3) \\
 &= 3 + 2.1 \\
 &= 5.1
 \end{aligned}$$



$$\begin{aligned}
 2) \quad 4.8 \times 4 &= (4 \times 4) + (4 \times 0.8) \\
 &= 16 + 3.2 \\
 &= 19.2
 \end{aligned}$$

	4	0.8
4	16	3.2

$$\begin{aligned}
 3) \quad 5.6 \times 7 &= (5 \times 7) + (0.6 \times 7) \\
 &= 35 + 4.2 \\
 &= 39.2
 \end{aligned}$$

	5	0.6
7	35	4.2

$$\begin{aligned}
 4) \quad 12.7 \times 9 &= (9 \times 12) + (9 \times 0.7) \\
 &= 108 + 6.3 \\
 &= 114.3
 \end{aligned}$$

	12	0.7
9	108	6.3

- | | | |
|--------------------|-----------------|-------------------------|
| 5) $\Delta = 0.9$ | $\square = 7$ | $7.9 \times 4 = 31.6$ |
| 6) $\Delta = 0.6$ | $\square = 8$ | $8.6 \times 3 = 25.8$ |
| 7) $\Delta = 9$ | $\square = 0.8$ | $9.8 \times 4 = 39.2$ |
| 8) $\Delta = 60$ | $\square = 1.5$ | $12.3 \times 5 = 61.5$ |
| 9) $\Delta = 20$ | $\square = 0.7$ | $20.1 \times 7 = 140.7$ |
| 10) $\Delta = 8$ | $\square = 30$ | $30.4 \times 8 = 243.2$ |
| 11) $\Delta = 9$ | $\square = 360$ | $40.3 \times 9 = 362.7$ |
| 12) $\Delta = 4$ | $\square = 0.8$ | $50.2 \times 4 = 200.8$ |
| 13) $\Delta = 3$ | $\square = 1.8$ | $1.6 \times 3 = 4.2$ |
| 14) $\Delta = 9$ | $\square = 0.8$ | $14.8 \times 9 = 133.2$ |
| 15) $\Delta = 0.9$ | $\square = 57$ | $19.9 \times 3 = 59.7$ |

Hei Mahi 5

1)

$$\begin{aligned}
 28 \times 62 &= (20 \times 60) + (8 \times 60) + (20 \times 2) + (8 \times 2) \\
 &= 1200 + 480 + 40 + 16 \\
 &= 1736
 \end{aligned}$$

	20	8
60	1200	480
2	40	16

2)

$$\begin{aligned}
 32 \times 41 &= (30 \times 40) + (2 \times 40) + (30 \times 1) + (2 \times 1) \\
 &= 1200 + 80 + 30 + 2 \\
 &= 1312
 \end{aligned}$$

	30	2
40	1200	80
1	30	2

3)

$$\begin{aligned} 17 \times 56 &= (10 \times 50) + (7 \times 50) + (10 \times 6) + (7 \times 6) \\ &= 500 + 350 + 60 + 42 \\ &= 952 \end{aligned}$$

	10	7
50	500	350
6	60	42

4)

$$\begin{aligned} 25 \times 37 &= (20 \times 30) + (20 \times 7) + (5 \times 30) + (5 \times 7) \\ &= 600 + 140 + 150 + 35 \\ &= 925 \end{aligned}$$

	20	5
30	600	150
7	140	35

5)

$$\begin{aligned} 14 \times 92 &= (10 \times 90) + (10 \times 2) + (4 \times 90) + (4 \times 2) \\ &= 900 + 20 + 360 + 8 \\ &= 1288 \end{aligned}$$

	10	4
90	900	360
2	20	8
	80	7

6)

$$\begin{aligned} 87 \times 63 &= (80 \times 60) + (80 \times 3) + (7 \times 60) + (7 \times 3) \\ &= 4800 + 240 + 420 + 21 \\ &= 5481 \end{aligned}$$

	80	7
60	4800	420
3	240	21

7)

$$\begin{aligned} 74 \times 33 &= (70 \times 30) + (70 \times 3) + (30 \times 4) + (3 \times 4) \\ &= 2100 + 210 + 120 + 12 \\ &= 2442 \end{aligned}$$

	70	4
30	2100	120
3	210	12

8)

$$\begin{aligned} 55 \times 55 &= (50 \times 50) + (50 \times 5) + (50 \times 5) + (5 \times 5) \\ &= 2500 + 250 + 250 + 25 \\ &= 3025 \end{aligned}$$

	50	5	8
50	2500	250	
5	250	25	

9)

$$\begin{aligned} 72 \times 86 &= (70 \times 80) + (80 \times 2) + (70 \times 6) + (2 \times 6) \\ &= 5600 + 160 + 420 + 12 \\ &= 6192 \end{aligned}$$

	70	2
80	5600	160
6	420	12

10)

$$\begin{aligned} 97 \times 79 &= (90 \times 70) + (70 \times 7) + (90 \times 9) + (9 \times 7) \\ &= 6300 + 490 + 810 + 63 \\ &= 7663 \end{aligned}$$

	90	7
70	6300	490
9	810	63

Hei Mahi 6

1)

$$\begin{aligned} 8.6 \times 16 &= (8 \times 10) + (8 \times 6) + (10 \times 0.6) + (6 \times 0.6) \\ &= 80 + 48 + 6 + 3.6 \\ &= 137.6 \end{aligned}$$

	8	0.6
10	80	6
6	48	3.6

2)

$$\begin{aligned} 3.4 \times 34 &= (3 \times 30) + (3 \times 4) + (30 \times 0.4) + (4 \times 0.4) \\ &= 90 + 12 + 12 + 1.6 \\ &= 115.6 \end{aligned}$$

	3	0.4
30	90	12
4	12	1.6

3)

$$\begin{aligned}
 1.2 \times 21 &= (1 \times 20) + (1 \times 1) + (20 \times 0.2) + (0.2 \times 1) \\
 &= 20 + 1 + 4 + 0.2 \\
 &= 25.2
 \end{aligned}$$

	1	0.2
20	20	4
1	1	0.2

4)

$$\begin{aligned}
 7.9 \times 86 &= (7 \times 80) + (7 \times 6) + (80 \times 0.9) + (0.9 \times 6) \\
 &= 560 + 42 + 72 + 5.4 \\
 &= 679.4
 \end{aligned}$$

	7	0.9
80	560	72
6	42	5.4

5)

$$\begin{aligned}
 6.4 \times 63 &= (6 \times 60) + (6 \times 3) + (0.4 \times 60) + (0.4 \times 3) \\
 &= 360 + 18 + 24 + 1.2 \\
 &= 403.2
 \end{aligned}$$

	6	0.4
60	360	24
3	18	1.2

6)

$$\begin{aligned}
 57 \times 1.8 &= (1 \times 50) + (0.8 \times 50) + (7 \times 0.8) + (1 \times 7) \\
 &= 50 + 40 + 5.6 + 7 \\
 &= 102.6
 \end{aligned}$$

	1	0.8
50	50	40
7	7	5.6

7)

$$\begin{aligned}
 61 \times 3.9 &= (60 \times 3) + (60 \times 0.9) + (3 \times 1) + (0.9 \times 1) \\
 &= 180 + 54 + 3 + 0.9 \\
 &= 237.9
 \end{aligned}$$

	3	0.9
60	180	54
1	3	0.9

8)

$$\begin{aligned}
 17 \times 6.4 &= (6 \times 10) + (6 \times 7) + (10 \times 0.4) + (0.4 \times 7) \\
 &= 60 + 42 + 4 + 2.8 \\
 &= 108.8
 \end{aligned}$$

	6	0.4
10	60	4
7	42	2.8

9)

$$\begin{aligned}
 92 \times 7.8 &= (7 \times 90) + (7 \times 2) + (0.8 \times 90) + (0.8 \times 2) \\
 &= 630 + 14 + 7.2 + 1.6 \\
 &= 717.6
 \end{aligned}$$

	7	0.8
90	630	72
2	14	1.6

10)

$$\begin{aligned}
 66 \times 6.6 &= (6 \times 60) + (6 \times 6) + (0.6 \times 60) + (0.6 \times 6) \\
 &= 360 + 36 + 36 + 3.6 \\
 &= 435.6
 \end{aligned}$$

	6	0.6
60	360	36
6	36	3.6

Hei Mahi 7

1)

$$\begin{aligned}
 3.4 \times 5.7 &= (3 \times 0.7) + (3 \times 5) + (0.4 \times 5) + (0.4 \times 0.7) \\
 &= 2.1 + 2.0 + 15 + 0.28 \\
 &= 19.38
 \end{aligned}$$

	3	0.4
5	15	2.0
0.7	2.1	0.28

2)

$$\begin{aligned}
 4.6 \times 8.1 &= (4 \times 8) + (4 \times 0.1) + (0.6 \times 8) + (0.6 \times 0.1) \\
 &= 32 + 0.4 + 4.8 + 0.06 \\
 &= 37.26
 \end{aligned}$$

	4	0.6
8	32	4.8
0.1	0.4	0.06

3)

$$\begin{aligned}
 6.1 \times 9.1 &= (6 \times 9) + (6 \times 0.1) + (0.1 \times 9) + (0.1 \times 0.1) \\
 &= 54 + 0.6 + 0.9 + 0.01 \\
 &= 55.51
 \end{aligned}$$

9

0.1

6	0.1
54	0.9
0.6	0.01

4)

$$\begin{aligned}
 5.2 \times 3.4 &= (5 \times 3) + (5 \times 0.4) + (0.2 \times 3) + (0.2 \times 0.4) \\
 &= 15 + 2.0 + 0.6 + 0.08 \\
 &= 17.68
 \end{aligned}$$

3

0.4

5	0.2
15	0.6
2.0	0.08

5)

$$\begin{aligned}
 6.8 \times 7.7 &= (6 \times 7) + (6 \times 0.7) + (0.8 \times 7) + (0.8 \times 0.7) \\
 &= 42 + 4.2 + 5.6 + 0.56 \\
 &= 52.36
 \end{aligned}$$

7

0.7

6	0.8
42	5.6
4.2	0.56

6)

$$\begin{aligned}
 9.2 \times 1.9 &= (9 \times 1) + (9 \times 0.9) + (0.2 \times 1) + (0.2 \times 0.9) \\
 &= 9 + 8.1 + 0.2 + 0.18 \\
 &= 17.48
 \end{aligned}$$

1

0.9

9	0.2
9	0.2
8.1	0.18

7)

$$\begin{aligned}
 4.7 \times 3.9 &= (4 \times 3) + (4 \times 0.9) + (0.7 \times 3) + (0.7 \times 0.9) \\
 &= 12 + 3.6 + 2.1 + 0.63 \\
 &= 18.33
 \end{aligned}$$

3

0.9

4	0.7
12	2.1
3.6	0.63

8)

$$\begin{aligned}
 8.8 \times 9.7 &= (8 \times 9) + (0.8 \times 9) + (8 \times 0.7) + (0.8 \times 0.7) \\
 &= 72 + 7.2 + 5.6 + 0.56 \\
 &= 85.36
 \end{aligned}$$

	8	0.8
9	72	7.2
0.7	5.6	0.56

9)

$$\begin{aligned}
 9.0 \times 8.6 &= (9 \times 8) + (9 \times 0.6) \\
 &= 72 + 5.4 \\
 &= 77.4
 \end{aligned}$$

	9	0.0
8	72	0.0
0.6	5.4	0.0

10)

$$\begin{aligned}
 12.3 \times 3.3 &= (12 \times 3) + (12 \times 0.3) + (0.3 \times 3) + (0.3 \times 0.3) \\
 &= 36 + 3.6 + 0.9 + 0.09 \\
 &= 40.59
 \end{aligned}$$

	12	0.3
3	36	0.9
0.3	3.6	0.09

Hei Mahi 8

- | | | | |
|----|--------------------|------------------|--------------------------|
| 1) | $\triangle = 0.2$ | $\square = 2.4$ | $8.2 \times 7.3 = 59.86$ |
| 2) | $\triangle = 0.2$ | $\square = 48$ | $8.2 \times 6.4 = 52.48$ |
| 3) | $\triangle = 0.1$ | $\square = 24$ | $6.3 \times 4.1 = 25.83$ |
| 4) | $\triangle = 2$ | $\square = 0.3$ | $1.8 \times 2.3 = 4.14$ |
| 5) | $\triangle = 0.5$ | $\square = 42$ | $6.7 \times 7.5 = 50.25$ |
| 6) | $\triangle = 0.4$ | $\square = 27$ | $9.4 \times 3.6 = 33.84$ |
| 7) | $\triangle = 6$ | $\square = 0.15$ | $6.5 \times 6.3 = 40.95$ |
| 8) | $\triangle = 9$ | $\square = 0.28$ | $9.7 \times 8.4 = 81.48$ |
| 9) | $\triangle = 0.54$ | $\square = 21$ | $7.6 \times 3.9 = 29.64$ |

Hei Mahi 9

$$\begin{aligned}
 1) \quad 24 \times 13 &= (20 \times 10) + (20 \times 3) + (4 \times 10) + (4 \times 3) \\
 &= 200 + 60 + 40 + 12 \\
 &= 312\text{m}
 \end{aligned}$$

10

3

	20	4
	200	40
	60	12

$$\begin{aligned}
 2) \quad 17 \times 12 &= (10 \times 10) + (10 \times 2) + (10 \times 7) + (7 \times 2) \\
 &= 100 + 20 + 70 + 14 \\
 &= 204\text{m}
 \end{aligned}$$

10

2

	10	7
	100	70
	20	14

$$\begin{aligned}
 3) \quad 87 \times 13 &= (80 \times 10) + (80 \times 3) + (7 \times 10) + (7 \times 3) \\
 &= 800 + 240 + 70 + 21 \\
 &= \$1131
 \end{aligned}$$

10

3

	80	7
	800	70
	240	21

$$\begin{aligned}
 4) \quad 2.30 \times 6.00 &= (2 \times 6) + (0.3 \times 6) \\
 &= 12 + 1.8 \\
 &= \$13.8
 \end{aligned}$$

6

	2	0.3
	12	1.8

$$\begin{aligned}
 5) \quad 3.2 \times 18 &= (3 \times 10) + (10 \times 0.2) + (8 \times 3) + (8 \times 0.2) \\
 &= 30 + 2.0 + 24 + 1.6 \\
 &= 57.6 \text{ kg}
 \end{aligned}$$

10

8

	3	0.2
	30	2.0
	24	1.6

$$\begin{aligned}
 6) \quad 18 \times 23 &= (10 \times 20) + (10 \times 3) + (8 \times 20) + (8 \times 3) \\
 &= 200 + 30 + 160 + 24 \\
 &= 414 \text{ tins}
 \end{aligned}$$

	10	8
20	200	160
3	30	24

$$\begin{aligned}
 7) \quad 1.6 \times 3.5 &= (1 \times 3) + (1 \times 0.5) + (0.6 \times 0.5) + (0.6 \times 3) \\
 &= 3 + 0.5 + 0.3 + 1.8 \\
 &= 5.6 \text{ sq m}
 \end{aligned}$$

	1	0.6
3	3	1.8
0.5	0.5	0.30

$$\begin{aligned}
 8) \quad 36 \times 28 &= (30 \times 20) + (8 \times 30) + (6 \times 20) + (6 \times 8) \\
 &= 600 + 240 + 120 + 48 \\
 &= 1008 \text{ sit ups}
 \end{aligned}$$

	30	6
20	600	120
8	240	48

$$\begin{aligned}
 9) \quad 49 \times 16 &= (40 \times 10) + (40 \times 6) + (9 \times 10) + (9 \times 6) \\
 &= 400 + 240 + 90 + 54 \\
 &= 784
 \end{aligned}$$

	40	9
10	400	90
6	240	54

$$\begin{aligned}
 10) \quad 1.3 \times 7.8 &= (1 \times 7) + (1 \times 0.8) + (0.3 \times 7) + (0.3 \times 0.8) \\
 &= 7 + 0.8 + 2.1 + 0.24 \\
 &= 10.14
 \end{aligned}$$

	1	0.3
7	7	2.1
0.8	0.8	0.24

Hei Mahi 10

Whakamāramahia tō tūhuratanga ki ō hoa mahi pāngarau, otirā, ki tō kaiako hoki.

Hei Mahi 11

1) $x^2 + 6x + 8$

2) $x^2 + 9x + 20$

3) $x^2 + 11x + 18$

4) $x^2 + 10x + 24$

5) $x^2 + 10x + 24$

6) $x^2 + 13x + 42$

7) $x^2 + 8x + 15$

8) $x^2 + 7x + 6$

9) $x^2 + 8x + 16$

10) $x^2 + 15x + 56$