

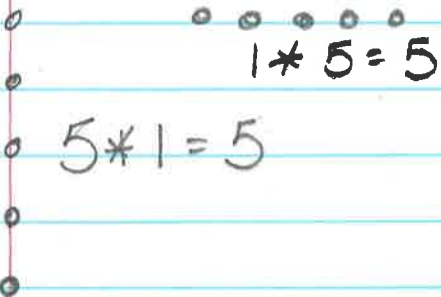
Rectangular Arrays

Rows * Columns = Sum

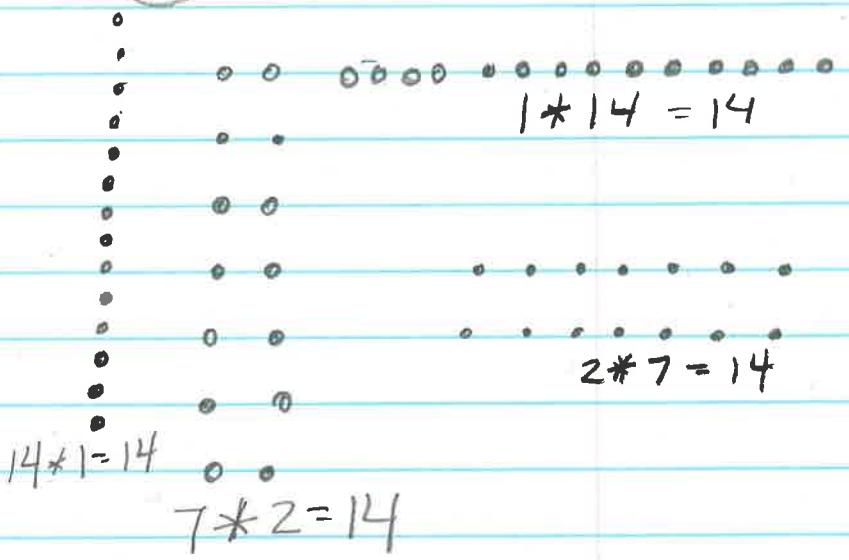
Study Link 1.2

①

5

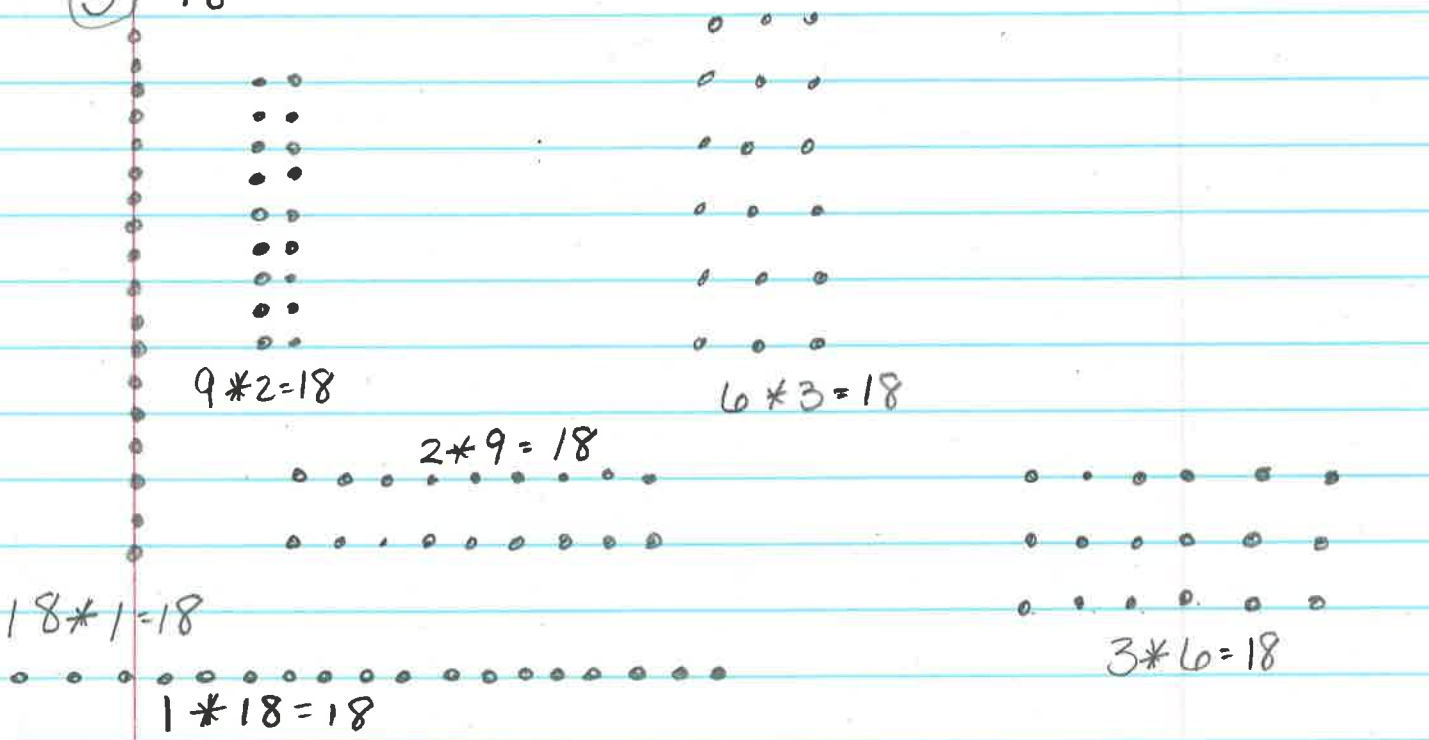


② 14



③

18



Practice

$$\begin{array}{r} \textcircled{4} \quad 487 \\ + 308 \\ \hline 795 \end{array}$$

$$\begin{array}{r} \textcircled{5} \quad 679 \\ - 408 \\ \hline 271 \end{array}$$

$$\begin{array}{r} \textcircled{6} \quad 2 \\ 14 \\ \times 7 \\ \hline 98 \end{array} \quad \text{or}$$

$$\begin{array}{r} \textcircled{7} \quad 32 \\ 164 \\ \times 6 \\ \hline 984 \end{array}$$

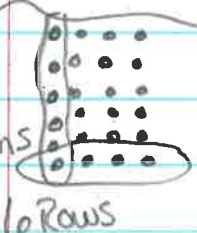
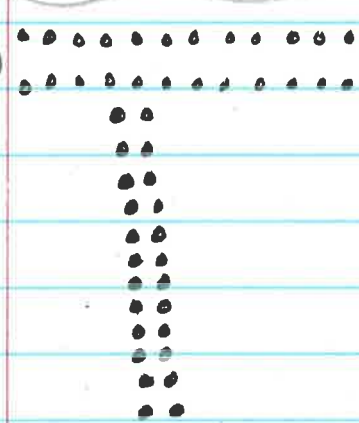
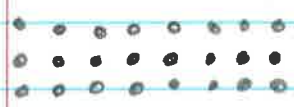
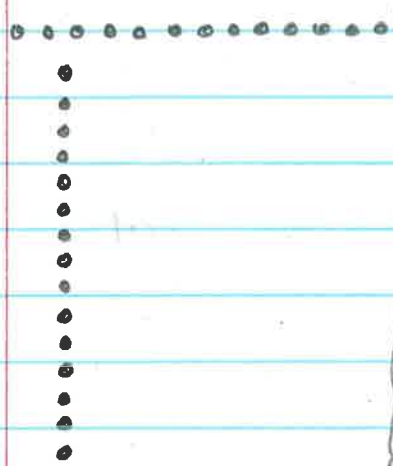
or

$$\begin{array}{r} 164 \\ \boxed{0} \quad \boxed{3} \quad \boxed{2} \\ \boxed{6} \quad \boxed{6} \quad \boxed{4} \\ \hline 984 \end{array} \quad \text{or}$$

$$\begin{array}{r} 14 \\ \boxed{0} \quad \boxed{2} \quad \boxed{7} \\ \boxed{7} \quad \boxed{8} \\ \hline 98 \end{array}$$

$$\textcircled{8} \quad 45 \div 9 = 5$$

Study Link 1-3

Array	# Model	Factors	Product (total)
<p>①</p> 	$6 \times 4 = \underline{24}$	6, 4	<u>24</u>
<p>②</p> 	$2 \times 12 = \underline{24}$ $12 \times 2 = \underline{24}$	2, 12	<u>24</u>
<p>③</p> 	$3 \times 8 = \underline{24}$	<u>3</u> , <u>8</u>	<u>24</u>
<p>④</p> 	$1 \times 15 = \underline{15}$ $15 \times 1 = \underline{15}$	1, 15	<u>15</u>

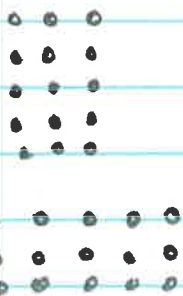
Array

Model

Factors

Product
(total)

⑤



$$5 * 3 = 15$$

$$3 * 5 = 15$$

3, 5

15

⑥



$$1 * 5 = 5$$

1, 5

5

Practice

⑦ $12 \overline{) 36} = 4$

⑧
$$\begin{array}{r} 1,288 \\ + 2,631 \\ \hline 3,919 \end{array}$$

⑨
$$\begin{array}{r} 307 \\ \times 9 \\ \hline 2,763 \end{array}$$

or

$$\begin{array}{r} 307 \\ \times 9 \\ \hline 2,763 \end{array}$$

⑩
$$\begin{array}{r} 29 \\ 306 \\ - 147 \\ \hline 159 \end{array}$$

StudyLink 1.4

① 5 has already been listed as a factor and is the middle factor

② 25 - ^{Factors} 1, 5, 25 ③ 1, 2, 4, 7, 14, 28

④ 42 - 1, 2, 3, 6, 7, 14, 21, 42

⑤ 100 - 1, 2, 4, 5, 10, 20, 25, 50, 100

Practice

$$\begin{array}{r} \textcircled{6} \quad 8417 \\ + 1134 \\ \hline 9551 \end{array}$$

$$\begin{array}{r} \textcircled{7} \quad 73 \\ - 25 \\ \hline 48 \end{array}$$

$$\begin{array}{r} \textcircled{8} \quad 512 \\ 6924 \\ \times \quad 6 \\ \hline 41,544 \end{array}$$

or

6	9	2	4	6
3	5	1	2	
4	6	4	2	4
	1	5	4	4

$$\begin{array}{r} \textcircled{9} \quad 5 \\ 634 \\ - 193 \\ \hline 441 \end{array}$$

$$\textcircled{10} \quad 56/8 = 7$$

Study Link 1.5

Divisible

998,876

by 2

5,890

by 2, 5, 10

36,540

by 2, 3, 6, 9, 5, 10

33,015

by 3, 5

1,098

by 2, 3, 6, 9

③ ³
$$\begin{array}{r} 250 \\ \times 7 \\ \hline 1750 \end{array}$$

or
$$\begin{array}{r} 250 \\ \times 7 \\ \hline 1750 \end{array}$$

④
$$\begin{array}{r} 1931 \\ 4763 \\ + 2059 \\ \hline 8753 \end{array}$$

⑤ $20 + 30 = 50$ mental Math
$$\begin{array}{r} 20 \\ \times 5 \\ \hline 250 \end{array}$$
 Add 1 zero

⑥
$$\begin{array}{r} 13 \\ 6 \overline{) 78} \\ - 60 \\ \hline 18 \\ - 18 \\ \hline \end{array}$$

or

$$\begin{array}{r} 6 \overline{) 78} \\ - 60 \\ \hline 18 \\ - 18 \\ \hline \end{array} \left. \begin{array}{l} 10 \\ + 3 \\ \hline 13 \end{array} \right\}$$

Study Link 1.6

- | | | | | | | | | | | |
|---|---|---|----|----|----|----|----|----|-----------|-----------|
| ① | 1 | ⑪ | | | | | | | prime | |
| ② | 1 | ② | ③ | 6 | 9 | 18 | | | composite | |
| ③ | 1 | ② | ③ | 4 | 6 | 8 | 12 | 24 | composite | |
| ④ | 1 | ② | 4 | ⑦ | 14 | 28 | | | composite | |
| ⑤ | 1 | ② | ③ | 4 | 6 | 9 | 12 | 18 | 36 | composite |
| ⑥ | 1 | ⑦ | 49 | | | | | | composite | |
| ⑦ | 1 | ② | ⑤ | 10 | 25 | 50 | | | composite | |
| ⑧ | 1 | ② | ⑤ | ⑦ | 10 | 14 | 35 | 70 | composite | |
| ⑨ | 1 | 2 | 4 | 5 | 10 | 20 | 25 | 50 | 100 | composite |

$$\begin{array}{r} \textcircled{10} \quad \begin{array}{r} 1 \quad 1 \quad 1 \\ 4,065 \\ 2,803 \\ + 2,954 \\ \hline 9,822 \end{array} \end{array}$$

$$\begin{array}{r} \textcircled{11} \quad \begin{array}{r} 8 \\ 392 \\ - 158 \\ \hline 234 \end{array} \end{array}$$

$$\begin{array}{r} \textcircled{12} \quad \begin{array}{r} 2 \\ 1,532 \\ \quad 14 \\ \hline 16128 \\ 15320 \\ \hline 21448 \end{array} \end{array}$$

$$\begin{array}{r} \begin{array}{|c|c|c|c|c|} \hline 0 & 0 & 0 & 0 & 0 \\ \hline 1 & 5 & 3 & 2 & 1 \\ \hline 0 & 2 & 0 & 0 & 4 \\ \hline 4 & 0 & 0 & 8 & \\ \hline \end{array} \\ \hline 1,448 \end{array}$$

$$\begin{array}{r} \textcircled{13} \quad \begin{array}{r} 9 \text{ R} 3 \text{ or } 9\frac{3}{4} \\ 4 \overline{) 39} \\ \underline{36} \\ 3 \end{array} \end{array}$$

$$\begin{array}{r} \textcircled{14} \quad \begin{array}{r} 4 \\ 48 \\ \times 15 \\ \hline 240 \\ 480 \\ \hline 720 \end{array} \end{array}$$

$$\begin{array}{r} \begin{array}{|c|c|c|} \hline 0 & 0 & 8 \\ \hline 4 & 0 & 8 \\ \hline 7 & 0 & 4 \\ \hline \end{array} \\ \hline 205 \end{array}$$

Study Link 1.7

① 16 ② 49 ③ 6 ④ $8 \times 8 = 64$

⑤ $5 \times 5 = 25$ ⑥ $9 \times 9 = 81$

⑦ Name rows then columns

$4 \times 9 = 36$

⑧ $5 \times 5 = 25$

⑨ $5 \times 5 = 25$ This shows a square number because there are equal amounts of rows and columns

Practice

⑩
$$\begin{array}{r} 297 \\ \times 43 \\ \hline 891 \\ 1188 \\ \hline 12681 \end{array}$$

or
$$\begin{array}{r} 97 \\ 4 \overline{) 3684} \\ \underline{12} \\ 72 \\ \underline{71} \\ 14 \\ \underline{13} \\ 14 \\ \underline{14} \\ 0 \end{array}$$

⑪
$$\begin{array}{r} 39 \\ 4 \overline{) 156} \\ \underline{16} \\ 0 \\ \underline{0} \\ 6 \\ \underline{6} \\ 0 \end{array}$$

⑫
$$\begin{array}{r} 1416 \\ + 8348 \\ \hline 9764 \end{array}$$

⑬
$$\begin{array}{r} 725 \\ - 414 \\ \hline 311 \end{array}$$

Study Link 1.8

① 9: 1, 3, 9 1 3 9
 $3^2 = 9$ The square root of 9 is 3.

25: 1, 5, 25 1 5 25
 $5^2 = 25$ The square root of 25 is 5.

36: 1, 2, 3, 4, 6, 9, 12, 18, 36

1, 2, 3, 4, 6, 9, 12, 18, 36
 $6^2 = 36$ The square root of 36 is 6

② Yes

③ 11² = 121

④ 50² = 2,500

⑤
$$\begin{array}{r} 4,318 \\ + 1,901 \\ \hline 6,219 \end{array}$$

⑥
$$\begin{array}{r} 34 \\ 36 \\ \times 85 \\ \hline 1,800 \\ 2,880 \\ \hline 3,060 \end{array}$$

or
$$\begin{array}{r} 36 \\ 3 \overline{) 108} \\ \underline{9} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

⑦
$$\begin{array}{r} 42.1 \\ 2852 \\ \times 5 \\ \hline 14,260 \end{array}$$

or
$$\begin{array}{r} 2852 \\ 1 \overline{) 2852} \\ \underline{10} \\ 18 \\ \underline{18} \\ 5 \\ \underline{5} \\ 0 \end{array}$$

⑧
$$\begin{array}{r} 8 R2 \\ 6 \overline{) 48} \\ \underline{48} \\ 0 \end{array}$$
 or $8 \frac{2}{6} = \frac{1}{3}$

⑨
$$\begin{array}{r} 2833 \\ - 291 \\ \hline 42 \end{array}$$

Study Link 1.9

① a. $10^4 = 10 \times 10 \times 10 \times 10 = 10,000$

b. $7^2 = 7 \times 7 = 49$

c. $20^3 = 20 \times 20 \times 20 = 8,000$

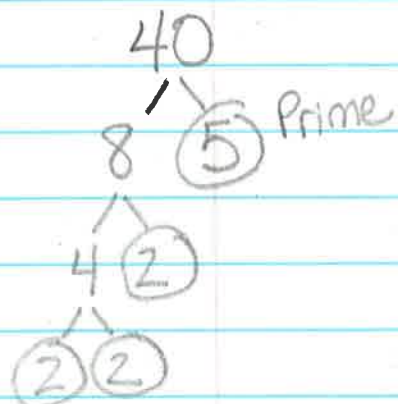
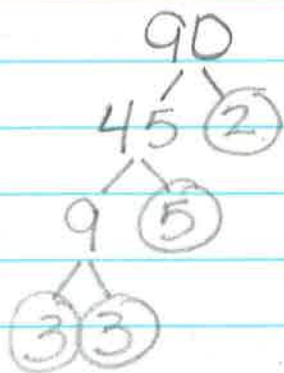
② a. 11^2 b. 9^3 c. 50^4

③ a. $2 \times 3 \times 3 \times 3 \times 5 \times 5 = 1,350$

b. $2 \times 2 \times 2 \times 2 \times 4 \times 4 = 256$

④ $40 = 2 \times 2 \times 2 \times 5 = 2^3 \times 5$

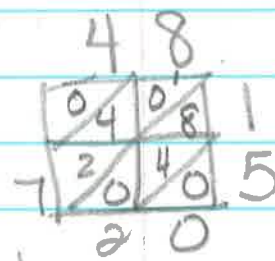
$90 = 2 \times 3 \times 3 \times 5 = 2 \times 3^2 \times 5$



Practice

⑤
$$\begin{array}{r} 6,383 \\ - 1,342 \\ \hline 5,041 \end{array}$$

⑥
$$\begin{array}{r} 48 \\ \times 15 \\ \hline 240 \\ + 480 \\ \hline 720 \end{array}$$
 or



⑦
$$\begin{array}{r} 50R4 \text{ or } 50\frac{4}{7} \\ 7 \overline{) 354} \\ \underline{35} \\ 04 \\ \underline{- 0} \\ 4 \end{array}$$

⑧
$$\begin{array}{r} 50,314 \\ + 48,826 \\ \hline 99,140 \end{array}$$

$$\begin{array}{r}
 12 \\
 9) \overline{7184} \\
 \underline{-7} \\
 14 \\
 \underline{14} \\
 0
 \end{array}$$

$$\begin{array}{r}
 10) 701 \\
 \times 68 \\
 \hline
 5608 \\
 +42060 \\
 \hline
 47,668
 \end{array}$$

or

	7	0	1	
4	4	2	0	0
7	5	6	0	8
	6	6	8	