

8. [Decimal \times, \div]

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Skill 8.1 Multiplying a whole number by a decimal number (1).

MMBlue 1 1 2 2 3 3 4 4
MMGreen 1 1 2 2 3 3 4 4

- Multiply from right to left, disregarding the decimal point.
- Count the number of places to the right of the decimal point in the question.
- Position the decimal point the same number of places from the right in the answer.

Q. $0.62 \times 4 =$

A. $0.62 \times 4 = 2.48$

$4 \times 2 = 8$

write 8

$4 \times 6 = 24$

carry 2, write 4

$4 \times 0 + \text{carry } 2 = 2$

write 2

$$\begin{array}{r} 0.62 \\ \times 4 \\ \hline 2.48 \end{array}$$

2 decimal places in question so
move decimal point 2 places from right in the answer

a) $0.9 \times 3 =$

2.7

b) $0.8 \times 2 =$

c) $0.7 \times 5 =$

$$\begin{array}{r} 0.9 \\ \times 3 \\ \hline 2.7 \end{array}$$

$$\begin{array}{r} 0.8 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 0.7 \\ \times 5 \\ \hline \end{array}$$

d) $0.4 \times 6 =$

e) $0.3 \times 7 =$

f) $0.6 \times 9 =$

$$\begin{array}{r} 0.4 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 0.3 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 0.6 \\ \times 9 \\ \hline \end{array}$$

g) $5.1 \times 3 =$

h) $4.3 \times 6 =$

i) $2.7 \times 4 =$

$$\begin{array}{r} 5.1 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4.3 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2.7 \\ \times 4 \\ \hline \end{array}$$

j) $3.8 \times 2 =$

k) $1.9 \times 5 =$

l) $7.3 \times 8 =$

$$\begin{array}{r} 3.8 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 1.9 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 7.3 \\ \times 8 \\ \hline \end{array}$$

Skill 8.1 Multiplying a whole number by a decimal number (2).

MMBlue 1 2 3 4
MMGreen 1 2 3 4

m) $0.24 \times 5 =$

$$\begin{array}{r} 0.24 \\ \times \quad 5 \\ \hline 1.20 \end{array}$$

n) $0.71 \times 6 =$

$$\begin{array}{r} 0.71 \\ \times \quad 6 \\ \hline \end{array}$$

o) $1.56 \times 8 =$

$$\begin{array}{r} 1.56 \\ \times \quad 8 \\ \hline \end{array}$$

p) $2.09 \times 4 =$

$$\begin{array}{r} 2.09 \\ \times \quad 4 \\ \hline \end{array}$$

q) $3.26 \times 3 =$

$$\begin{array}{r} 3.26 \\ \times \quad 3 \\ \hline \end{array}$$

r) $4.82 \times 2 =$

$$\begin{array}{r} 4.82 \\ \times \quad 2 \\ \hline \end{array}$$

s) $14.02 \times 6 =$

$$\begin{array}{r} 14.02 \\ \times \quad 6 \\ \hline \end{array}$$

t) $4 \times 20.15 =$

$$\begin{array}{r} 20.15 \\ \times \quad 4 \\ \hline \end{array}$$

u) $18.02 \times 3 =$

$$\begin{array}{r} 18.02 \\ \times \quad 3 \\ \hline \end{array}$$

v) $8 \times 10.91 =$

$$\begin{array}{r} 10.91 \\ \times \quad 8 \\ \hline \end{array}$$

w) $2.008 \times 7 =$

$$\begin{array}{r} 2.008 \\ \times \quad 7 \\ \hline \end{array}$$

x) $6 \times 0.521 =$

$$\begin{array}{r} 0.521 \\ \times \quad 6 \\ \hline \end{array}$$

y) $5 \times 3.105 =$

$$\begin{array}{r} 3.105 \\ \times \quad 5 \\ \hline \end{array}$$

z) $5.312 \times 4 =$

$$\begin{array}{r} 5.312 \\ \times \quad 4 \\ \hline \end{array}$$

zz) $3 \times 2.041 =$

$$\begin{array}{r} 2.041 \\ \times \quad 3 \\ \hline \end{array}$$

Skill 8.2 Dividing a decimal number by a whole number.

MMBlue 1 1 2 2 3 3 4 4
MMGreen 1 1 2 2 3 3 4 4

- Line up the decimal point in your answer with the decimal point in the question.
- Divide from left to right.
- Break down the division into smaller divisions.
- If any result is less than 1: Cross off the number being divided into.
'Carry over' this amount to the next column.
Add on the carry.
Then try dividing again.
- Always keep your working columns in line, aligning units with units, tens with tens, etc.

Q. $1.26 \div 9 =$

A. $1.26 \div 9 = 0.14$

$1 \div 9 = ?$ (less than 0) carry 1, write 0

Line up the decimal point.

$12 \div 9 = 1$

carry 3, write 1

$36 \div 9 = 4$

write 4

$$\begin{array}{r} 0.14 \\ 9 \overline{) 1.26} \\ \underline{9} \\ 3 \\ \underline{36} \\ 0 \end{array}$$

a) $4.2 \div 6 =$

0.7

b) $2.4 \div 8 =$

c) $1.5 \div 3 =$

÷ from left

$$\begin{array}{r} 0.7 \\ 6 \overline{) 4.2} \\ \underline{6} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

Line up decimal points

$$\begin{array}{r} \\ 8 \overline{) 2.4} \\ \underline{8} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

$$\begin{array}{r} \\ 3 \overline{) 1.5} \\ \underline{3} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

d) $6.5 \div 5 =$

e) $7.2 \div 4 =$

f) $9.8 \div 7 =$

$$\begin{array}{r} \\ 5 \overline{) 6.5} \\ \underline{5} \\ 1 \\ \underline{5} \\ 0 \end{array}$$

$$\begin{array}{r} \\ 4 \overline{) 7.2} \\ \underline{4} \\ 3 \\ \underline{3} \\ 0 \end{array}$$

$$\begin{array}{r} \\ 7 \overline{) 9.8} \\ \underline{7} \\ 2 \\ \underline{14} \\ 0 \end{array}$$

g) $15.3 \div 9 =$

h) $1.11 \div 3 =$

i) $14.5 \div 5 =$

$$\begin{array}{r} \\ 9 \overline{) 15.3} \\ \underline{9} \\ 6 \\ \underline{6} \\ 0 \end{array}$$

$$\begin{array}{r} \\ 3 \overline{) 1.11} \\ \underline{3} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

$$\begin{array}{r} \\ 5 \overline{) 14.5} \\ \underline{5} \\ 9 \\ \underline{10} \\ 4 \\ \underline{10} \\ 0 \end{array}$$

j) $2.66 \div 7 =$

k) $0.96 \div 6 =$

l) $2.72 \div 8 =$

$$\begin{array}{r} \\ 7 \overline{) } \\ \underline{} \\ \end{array}$$

$$\begin{array}{r} \\ 6 \overline{) } \\ \underline{} \\ \end{array}$$

$$\begin{array}{r} \\ 8 \overline{) } \\ \underline{} \\ \end{array}$$

m) $10.4 \div 4 =$

n) $1.47 \div 3 =$

o) $23.4 \div 9 =$

$$\begin{array}{r} \\ \div 4 \end{array}$$

$$\begin{array}{r} \\ \div 3 \end{array}$$

$$\begin{array}{r} \\ \div 9 \end{array}$$

Skill 8.3 Multiplying a decimal number by a decimal number.

- Multiply from right to left, disregarding the decimal point.
- Count the number of places to the right of the decimal point in the question.
- Position the decimal point the same number of decimal places from the right in the answer.
- Use zeros as place holders, if necessary.

Example: $0.02 \times 0.3 = 0.006$

- If the result is less than 1, write a zero in the units place.

Example: By convention 0.37 not .37

Q. $2.5 \times 0.8 =$

A. $2.5 \times 0.8 = 2$

$8 \times 5 = 40$

carry 4, write 0

$8 \times 2 + \text{carry } 4 = 20$

write 20

$$\begin{array}{r} 2.5 \\ \times 0.8 \\ \hline 2.00 \end{array}$$

2 decimal places in question so
move decimal point 2 places from right in the answer

a) $0.8 \times 0.9 =$

0.72

$$\begin{array}{r} 0.8 \\ \times 0.9 \\ \hline 0.72 \end{array}$$

b) $0.3 \times 0.4 =$

$$\begin{array}{r} 0.3 \\ \times 0.4 \\ \hline \end{array}$$

c) $0.5 \times 0.8 =$

$$\begin{array}{r} 0.5 \\ \times 0.8 \\ \hline \end{array}$$

d) $0.7 \times 0.6 =$

$$\begin{array}{r} 0.7 \\ \times 0.6 \\ \hline \end{array}$$

e) $0.9 \times 0.4 =$

$$\begin{array}{r} 0.9 \\ \times 0.4 \\ \hline \end{array}$$

f) $1.2 \times 0.6 =$

$$\begin{array}{r} 1.2 \\ \times 0.6 \\ \hline \end{array}$$

g) $1.4 \times 0.7 =$

$$\begin{array}{r} 1.4 \\ \times 0.7 \\ \hline \end{array}$$

h) $2.3 \times 0.9 =$

$$\begin{array}{r} 2.3 \\ \times 0.9 \\ \hline \end{array}$$

i) $1.6 \times 0.3 =$

$$\begin{array}{r} 1.6 \\ \times 0.3 \\ \hline \end{array}$$

j) $0.5 \times 0.06 =$

0.03

$$\begin{array}{r} 0.5 \\ \times 0.06 \\ \hline 0.030 \end{array}$$

remove unnecessary zero

k) $0.16 \times 0.3 =$

$$\begin{array}{r} 0.16 \\ \times 0.3 \\ \hline \end{array}$$

l) $1.07 \times 0.9 =$

$$\begin{array}{r} 1.07 \\ \times 0.9 \\ \hline \end{array}$$

< 1 so write zero in units place

Skill 8.4 Dividing a decimal number by a decimal number.

MMBlue 11 22 33 44
MMGreen 11 22 33 44

- Move the decimal point to the right in the divisor, as many places as you need to make a whole number.
- Then move the decimal point the same number of places to the right in the dividend.
Example: $0.\widehat{5}6 \div 0.\widehat{8} = 5.6 \div 8 = 0.7$
- Add zeros as place holders, if necessary.
Example: $4.9 \div 0.07 = 4.\widehat{90} \div 0.\widehat{07} = 490 \div 7 = 70$
- Line up the decimal point in your answer with the decimal point in the question.
- Divide from left to right.
- Break down the division into smaller divisions.
- If any result is less than 1: Cross off the number being divided into.
'Carry over' this amount to the next column.
Add on the carry.
Then try dividing again.
- Always keep your working columns in line, aligning units with units, tens with tens, etc.

Q. $0.63 \div 0.7 =$

A. $0.\widehat{63} \div 0.\widehat{7} =$
 $= 6.3 \div 7$
 $= 0.9$

$$7 \overline{) \begin{array}{r} 0.9 \\ \underline{63} \\ 0 \end{array}}$$

$6 \div 7 = ?$ (less than 0) carry 6, write 0
Line up the decimal point.
 $63 \div 7 = 9$ write 9

a) $3.\widehat{6} \div 0.\widehat{6} =$

1 place right makes a whole number

$= 36 \div 6 =$

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

b) $1.4 \div 0.7 =$

$=$ $=$

$$7 \overline{) \begin{array}{r} 14 \\ \underline{14} \\ 0 \end{array}}$$

c) $4.5 \div 0.9 =$

$=$ $=$

$$9 \overline{) \begin{array}{r} 45 \\ \underline{45} \\ 0 \end{array}}$$

d) $7.6 \div 0.2 =$

$=$ $=$

$$\overline{) \begin{array}{r} 76 \\ \underline{152} \\ 0 \end{array}}$$

e) $6.9 \div 0.3 =$

$=$ $=$

$$\overline{) \begin{array}{r} 69 \\ \underline{207} \\ 0 \end{array}}$$

f) $0.76 \div 0.4 =$

$=$ $=$

$$4 \overline{) \begin{array}{r} 76 \\ \underline{304} \\ 0 \end{array}}$$

g) $0.08 \div 0.4 =$

$=$ $=$

$$\overline{) \begin{array}{r} 8 \\ \underline{32} \\ 0 \end{array}}$$

h) $0.49 \div 0.7 =$

$=$ $=$

$$\overline{) \begin{array}{r} 49 \\ \underline{245} \\ 0 \end{array}}$$

i) $6.42 \div 0.6 =$

$=$ $=$

$$\overline{) \begin{array}{r} 642 \\ \underline{384} \\ 258 \\ \underline{258} \\ 0 \end{array}}$$

j) $9.\widehat{5} \div 0.\widehat{05} =$

$= 950 \div 5 =$

$$5 \overline{) \begin{array}{r} 950 \\ \underline{475} \\ 475 \\ \underline{475} \\ 0 \end{array}}$$

k) $2.7 \div 0.09 =$

$=$ $=$

$$\overline{) \begin{array}{r} 27 \\ \underline{27} \\ 0 \end{array}}$$

l) $7.2 \div 0.08 =$

$=$ $=$

$$\overline{) \begin{array}{r} 72 \\ \underline{64} \\ 80 \\ \underline{80} \\ 0 \end{array}}$$

Skill 8.5 Dividing a whole number by a decimal number.

MMBlue 1 1 2 2 3 3 4 4
MMGreen 1 1 2 2 3 3 4 4

- Move the decimal point to the right in the divisor, as many places as you need to make a whole number.
- Then move the decimal point the same number of places to the right in the dividend.
- Add zeros as place holders.

Example: $16 \div 0.4 = 16.\widehat{0} \div 0.\widehat{4} = 160 \div 4 = 40$

- Line up the decimal point in your answer with the decimal point in the question.
- Divide from left to right.
- Break down the division into smaller divisions.
- If any result is less than 1: Cross off the number being divided into.
'Carry over' this amount to the next column.
Add on the carry.
Then try dividing again.
- Always keep your working columns in line, aligning units with units, tens with tens, etc.

Q. $9 \div 0.6 =$ **A.** $9.\widehat{0} \div 0.\widehat{6} =$ 1 place right makes a whole number

add zero as place holder $= 90 \div 6$

$= 15$

$$\begin{array}{r} 15 \\ 6 \overline{) 90} \end{array}$$

$9 \div 6 = 1$
 $30 \div 6 = 5$

carry 3, write 1
 write 5

a) $5 \div 0.5 =$ **b)** $6 \div 0.3 =$ **c)** $6 \div 0.4 =$

$= 50 \div 5 =$ 10 $=$ $=$

$$\begin{array}{r} 10 \\ 5 \overline{) 50} \end{array}$$

$$\begin{array}{r} \\ 3 \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

d) $8 \div 0.1 =$ **e)** $5 \div 0.2 =$ **f)** $4 \div 0.5 =$

$=$ $=$ $=$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

g) $9 \div 0.2 =$ **h)** $3 \div 0.06 =$ **i)** $7 \div 0.04 =$

$=$ $=$ $=$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

$$\begin{array}{r} \\ 6 \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

j) $2 \div 0.04 =$ **k)** $5 \div 0.01 =$ **l)** $1 \div 0.25 =$

$=$ $=$ $=$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$

$$\begin{array}{r} \\ \overline{) } \end{array}$$