Basics

1 (a)

324

(b) 324 ÷ 10 = ⬚

(c) 324 ÷ 10 ÷ 10 = 324 ÷ 100 = ⬚

(d) 324 ÷ 10 ÷ 10 ÷ 10 = 324 ÷ ⬚ = ⬚

2 Complete the charts and fill in the blanks.

(a)

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		8 .	3	2	
		.			

÷ 10

8 . 3 2   ÷ 10 = ⬚

(b)

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
1	4	2 .	7		
		.			

÷ 100

1 4 2 . 7   ÷ 100 = ⬚

(c)

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
4	1	0			

÷ 1,000

4 1 0 . ÷ 1,000 = ◻

(d)

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
	2	5			

÷ 1,000

2 5 . ÷ 1,000 = ◻

Practice

3 (a) 0.1 ÷ 10 = ◻   (b) 0.01 ÷ 10 = ◻

(c) 16.59 ÷ 10 = ◻   (d) 32 ÷ 10 = ◻

4 (a) 10 ÷ 100 = ◻   (b) 0.1 ÷ 100 = ◻

(c) 30.9 ÷ 100 = ◻   (d) 2,400.3 ÷ 100 = ◻

5 (a) 100 ÷ 1,000 = ☐　　　　(b) 10 ÷ 1,000 = ☐

(c) 146 ÷ 1,000 = ☐　　　　(d) 2,981 ÷ 1,000 = ☐

6 (a) 18 ÷ 1,000 = ☐　　　　(b) 278.1 ÷ 10 = ☐

(c) 41.3 ÷ 100 = ☐　　　　(d) 2,003.1 ÷ 100 = ☐

(e) 89.89 ÷ 10 = ☐　　　　(f) 16,004 ÷ 1,000 = ☐

7 (a) 82.7 ÷ ☐ = 8.27　　　　(b) 902 ÷ ☐ = 0.902

(c) ☐ ÷ 100 = 0.034　　　　(d) 123.82 ÷ ☐ = 12.382

(e) ☐ ÷ 10 = 70.18　　　　(f) 1,401 ÷ ☐ = 1.401

Challenge

8 (a) 0.3 ÷ 1,000 = ☐　　　　(b) 0.13 ÷ 100 = ☐

(c) 0.08 ÷ ☐ = 0.0008　　　　(d) 54.321 ÷ ☐ = 5.4321
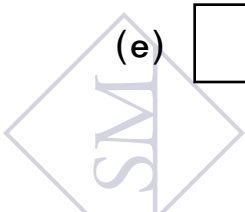
Basics

1 (a) $45 \times 0.8 = 45 \times 8 \times 0.1 = \boxed{} \times 0.1 = \boxed{}$

(b) $4.5 \times 0.8 = 45 \times 8 \times 0.1 \times 0.1 = \boxed{}$

(c) $4.5 \times 0.08 = 45 \times 8 \times 0.1 \times 0.01 = \boxed{}$

(d) $0.45 \times 0.8 = 45 \times 8 \times 0.01 \times 0.1 = \boxed{}$

2 (a) Estimate the value of 503 × 55.

$503 \times 55 \approx 500 \times 60 = \boxed{}$

(b) Find the value of 503 × 55.

$503 \times 55 = \boxed{}$

```
        5  0  3
  ×        5  5
  ┌──┬──┬──┬──┐
  ┊  ┊  ┊  ┊  ┊
  ├──┼──┼──┼──┤
  ┊  ┊  ┊  ┊  ┊
  └──┴──┴──┴──┘
```

(c) Estimate the value of 50.3 × 0.55.

$50.3 \times 0.55 \approx 50 \times 0.6 = \boxed{}$

(d) Find the value of 50.3 × 0.55.

$50.3 \times 0.55 = \boxed{}$

```
        5  0.3   ← 1 decimal place
  ×        0.5  5   ← 2 decimal places
  ┌──┬──┬──┬──┐
  ┊  ┊  ┊  ┊  ┊
  ├──┼──┼──┼──┤
  ┊  ┊  •  ┊  ┊   ← 3 decimal places
  └──┴──┴──┴──┘
```

3 (a) Estimate the value of 42.5 × 0.6.

$$42.5 \times 0.6 \approx 40 \times 0.6 = \boxed{}$$

(b) Find the value of 42.5 × 0.6

$$
\begin{array}{r}
4\ \ 2 \, . \, 5 \quad \leftarrow 1 \text{ decimal place} \\
\times \qquad 0 \cdot 6 \quad \leftarrow 1 \text{ decimal place} \\
\hline
\boxed{\ \ \ |\ \ \cdot\ |\ \ \ } \quad \leftarrow 2 \text{ decimal places}
\end{array}
$$

Practice

4 Estimate the values.

(a) $482 \times 7 \approx 500 \times 7 = \boxed{}$

(b) $482 \times 0.7 \approx 500 \times 0.7 = \boxed{}$

(c) $48.2 \times 0.7 \approx 50 \times 0.7 = \boxed{}$

(d) $4.82 \times 0.7 \approx 5 \times 0.7 = \boxed{}$

(e) $48.2 \times 0.07 \approx 50 \times 0.07 = \boxed{}$

5 Circle values that are less than 1. Use estimation.

| 0.42 × 0.9 | 3.92 × 0.4 | 8.9 × 0.07 | 1.8 × 0.32 |

Basics

1 Connor has 6 quarters and Jett has 18 quarters.

Connor 🪙🪙🪙🪙🪙🪙

Jett 🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙🪙

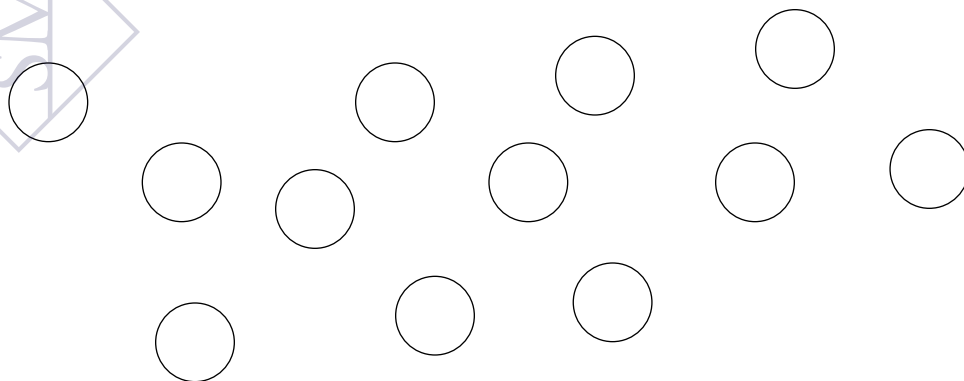(a) Write the ratio of the number of stacks Connor has to the number of stacks Jett has if both boys make...

stacks of 3 with their quarters.

stacks of 6 with their quarters.

stacks of 2 with their quarters.

(b) Each of the ratios above are equivalent ratios. What is the simplest form of the ratio of coins Connor has to coins Jett has?

2 Shade enough circles so that for every shaded circle there are 2 unshaded circles. Write the ratio of shaded to unshaded circles in simplest form.

3 To make punch, 8 cups of juice is mixed with 4 cups of soda.

    (a) Write the ratio of the total number of fluid ounces of juice to the total number of fluid ounces of soda. (8 fluid ounces = 1 cup)

    (b) Write the ratio of the number of quarts of juice to the number of quarts of soda. (4 cups = 1 quart)

4 Find the equivalent ratio for 9 : 5 where the new ratio's first term is 54.

$54 \div 9 =$ ☐

$\times$ ☐

9 : 5
↓ ↓
54 : ☐

Practice

5 Find the equivalent ratios.

    (a) 7 : 3 = 21 : ☐   (b) 4 : 5 = ☐ : 30

    (c) 36 : 21 = 12 : ☐   (d) ☐ : 7 = 6 : 6

6 Express each ratio in simplest form.

(a) 12 : 4

(b) 25 : 9

(c) 20 : 100

(d) 42 : 70

(e) 72 : 56

(f) 91 : 63

7 Abby spent 15 minutes riding her bike and 1 hour walking. What was the ratio of the time spent riding her bike to the time spent walking?

Challenge

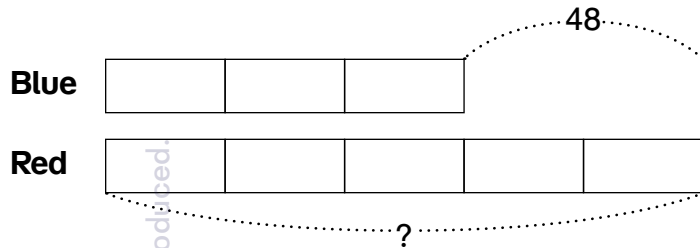**8** Which of these ratios are equivalent ratios?
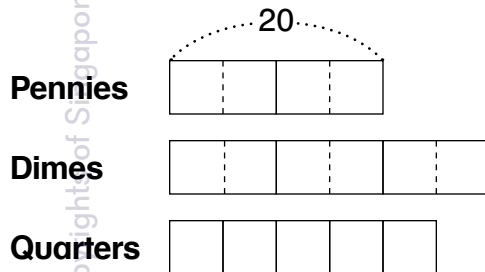
| 8 : 14 | 12 : 20 | 21 : 35 | 12 : 21 |

Basics

1 The ratio of blue game pieces to red game pieces is 3 : 5. There are 48 more red pieces than blue pieces. How many red game pieces are there?
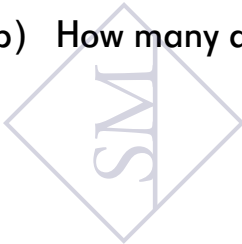
48

Blue

Red

?

2 Amy has $\frac{2}{3}$ as many pennies as dimes. The ratio of dimes to quarters is 6 : 5. She has 20 pennies.
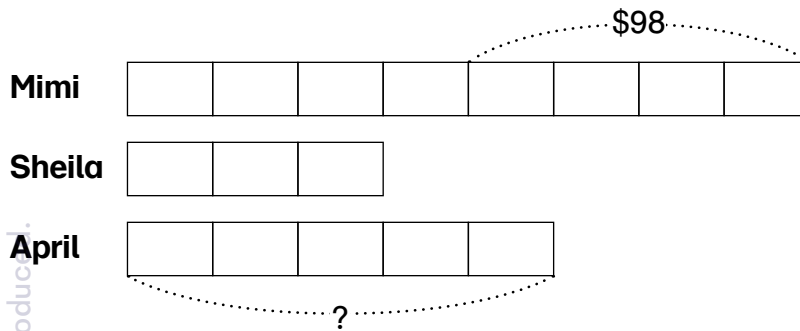
(a) What is the ratio of pennies to dimes to quarters?

20

Pennies

Dimes

Quarters

(b) How many dimes and how many quarters does she have?

(c) How much money does she have?

3 The ratio of Mimi's money to Sheila's money to April's money was 8 : 3 : 5. After Mimi spent $98, the ratio of Mimi's money to Sheila's money was 4 : 3. How much money does April have?

Mimi
Sheila
April

$98
?

Practice

4 A length of rope is cut into three pieces in the ratio 7 : 5 : 4. The longest piece is 84 cm longer than the shortest piece. What was the original length of the rope in meters and centimeters?

Basics

1 (a) A laser printer printed 336 pages in 12 minutes. At this rate, how many pages can it print in 50 minutes?

336 pages   ? pages

1 min   12 min   50 min

12 min ⟶ ⬚ pages

1 min ⟶ $\dfrac{}{12}$ = ⬚ pages
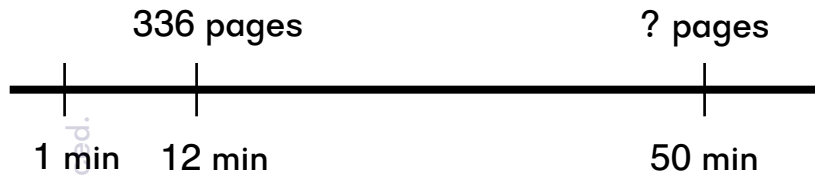
50 min ⟶ 50 × ⬚ = ⬚ pages

(b) An inkjet printer printed 675 pages in $\frac{1}{2}$ of an hour. At this rate, how many pages can it print in 12 minutes?

? pages   675 pages

1 min   12 min   30 min

30 min ⟶ ⬚ pages

1 min ⟶ $\dfrac{}{30}$ pages

12 min ⟶ $\dfrac{}{30}$ × 12 = ⬚ pages

(c) Which printer is faster and why?

Practice

2 A rear bike light flashes 4 times a second. How many times will it flash in 1 minute?

3 Jonah can walk 14 miles in 4 hours. At this rate, how far can he walk in 6 hours?

4 A machine can fill 400 bags of beans in 25 minutes. How many bags will it fill in 2 hours?

5 Carla earned $70 for 3 hours 30 minutes of babysitting. At this rate, how much will she earn if she babysits for 8 hours?

Challenge

6 A tank is leaking water at a rate of 1 L every 4 minutes. The tank's base measures 1 m by 90 cm and its height is 45 cm. If it took 21 hours and 36 minutes for the tank to empty, how far below the top of the tank was the original height of the water in the tank?