

Equivalent Ratios and Rates

Complete each ratio table.

1. A recipe uses 2 cups of flour for every 3 eggs. Example

Flour (cups)	2	4	6	8	10	20
Eggs	3	6	9	12	15	30

2. A train travels 60 km in 1 hour.

Distance (km)	60		180			600
Time (hours)	1	2		5	8	

3. A paint color uses 12 L of blue for every 8 L of yellow.

Blue (L)	12		3	9		30
Yellow (L)	8	4			10	

4. 5 notebooks cost \$15.

Notebooks	5	1		4	10	
Cost (\$)	15		6			60

5. A plant grows 4 cm every 3 weeks.

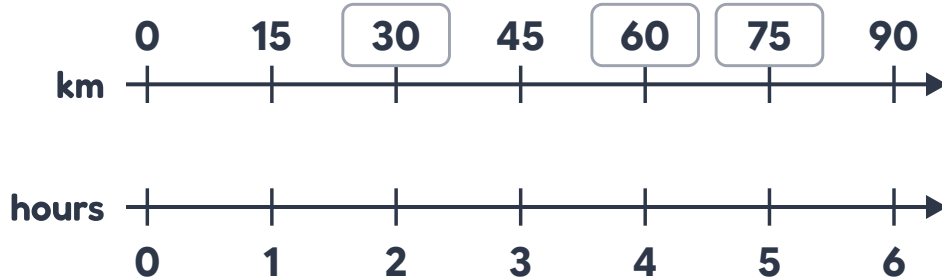
Growth (cm)	4		16		36	
Time (weeks)	3	6		18		36

Equivalent Ratios and Rates

Complete each double number line. Then answer the question.

1. A cyclist rides **15 km** in **1 hour**.

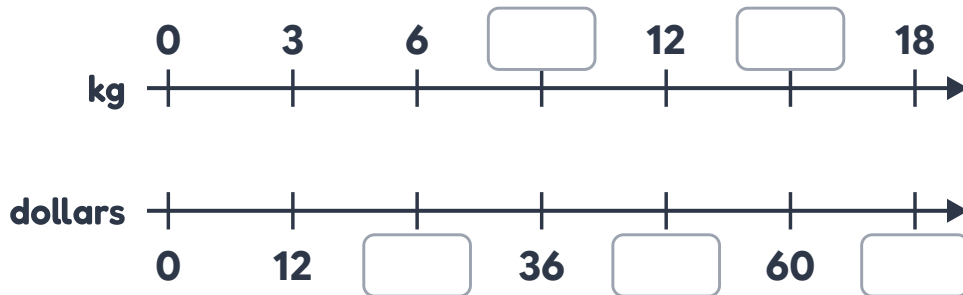
Example



How far does the cyclist ride in 10 hours?

150 km

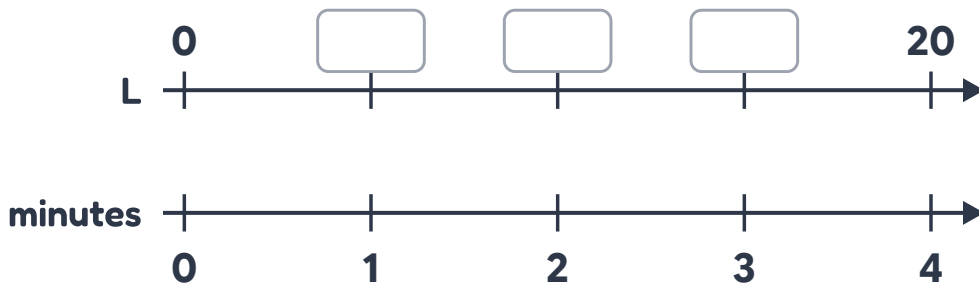
2. 3 kg of apples cost \$12.



How much does 1 kg of apples cost?

\$ _____

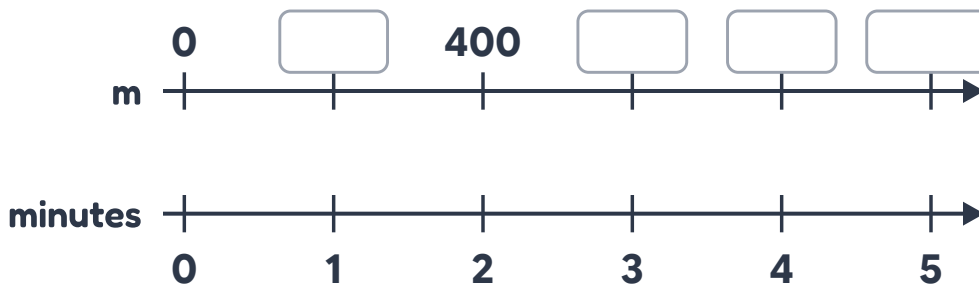
3. A tap fills a tub with **20 L** of water in **4 minutes**.



How many liters does the tap fill in 9 minutes?

 L

4. A runner runs **400 m** in **2 minutes**.



How far does the runner run in 8 minutes?

 m

Equivalent Ratios and Rates

Scale ratios up and down. Write ratios as percents.

Write the missing number. Write $\times$ or $\div$ on the arrow.

Example

1. $3 : 5 = \boxed{12} : 20$

$\xrightarrow{\times 4}$

2. $24 : 30 = 4 : \boxed{}$

$\xrightarrow{\div 6}$

3. $2 : 7 = 10 : \boxed{}$

$\xrightarrow{\times 5}$

4. $36 : 48 = \boxed{} : 4$

$\xrightarrow{\div 12}$

5. $4 : 9 = \boxed{} : 36$

$\xrightarrow{\times 4}$

6. $50 : 20 = 5 : \boxed{}$

$\xrightarrow{\div 10}$

7. $7 : 3 = 28 : \boxed{}$

$\xrightarrow{\times 4}$

8. $45 : 15 = \boxed{} : 5$

$\xrightarrow{\div 3}$

Write each ratio as a rate out of 100. Then write the percent.

9. $1:2 = \boxed{50} : 100 = \boxed{50} \%$

10. $3:5 = \boxed{} : 100 = \boxed{} \%$

11. $1:4 = \boxed{} : 100 = \boxed{} \%$

12. $7:20 = \boxed{} : 100 = \boxed{} \%$

13. $9:10 = \boxed{} : 100 = \boxed{} \%$

14. $12:25 = \boxed{} : 100 = \boxed{} \%$

Circle every ratio that is equivalent to the first one.

15. $2:3$ | $4:6$ $3:2$ $6:9$ $8:10$ $10:15$ $5:6$ $20:30$

16. $5:4$ | $10:8$ $4:5$ $15:12$ $25:16$ $20:16$ $9:8$ $50:40$

Equivalent Ratios and Rates

Find each unit rate. Then use unit rates to solve.

Find the unit rate.

Example

1. **180 km in 3 hours**

60 km per hour

2. **\$12.00 for 4 notebooks**

\$ _____ per notebook

3. **24 L in 6 minutes**

_____ L per minute

4. **\$4.50 for 3 kg of apples**

\$ _____ per kg

5. **350 m in 5 minutes**

_____ m per minute

6. **\$7.20 for 6 muffins**

\$ _____ per muffin

7. **450 g of flour for 9 pancakes**

_____ g per pancake

8. **\$2.40 for 4 L of milk**

\$ _____ per liter

Use the unit rate to solve.

9. One pen costs **\$1.25**. How much do **6** pens cost?

\$ _____

10. A bus travels **80 km** in **1 hour**. How far does it travel in **4 hours**?

_____ km

11. Rice costs **\$2.40** for **1 kg**. How much do **5 kg** cost?

\$ _____

12. A pump moves **15 L** of water every minute. How many minutes does it take to move **90 L**?

_____ minutes

Equivalent Ratios and Rates

Find the better buy. Then solve the word problems.

Find each unit price. Circle the better buy.

Example

1. Juice

2 L for \$3.00

\$ 1.50 per L

3 L for \$4.20

\$ 1.40 per L

2. Pencils

12 pencils for \$3.00

\$ _____ per pencil

8 pencils for \$2.40

\$ _____ per pencil

3. Rice

5 kg for \$9.50

\$ _____ per kg

2 kg for \$3.60

\$ _____ per kg

Solve.

4. A recipe uses 3 cups of flour for every 2 cups of milk. How many cups of flour go with 8 cups of milk?

_____ cups

5. In a class, the ratio of boys to girls is 4:5. There are 20 girls. How many boys are there?

_____ boys

6. A cyclist rides 45 km in 3 hours. At the same speed, how far does she ride in 5 hours?

_____ km

7. Out of 25 students, 15 play soccer. What percent of the students play soccer?

_____ %

Equivalent Ratios and Rates

Complete each ratio table.

1. A recipe uses 2 cups of flour for every 3 eggs.

Example

Flour (cups)	2	4	6	8	10	20
Eggs	3	6	9	12	15	30

2. A train travels 60 km in 1 hour.

Distance (km)	60	120	180	300	480	600
Time (hours)	1	2	3	5	8	10

3. A paint color uses 12 L of blue for every 8 L of yellow.

Blue (L)	12	6	3	9	15	30
Yellow (L)	8	4	2	6	10	20

4. 5 notebooks cost \$15.

Notebooks	5	1	2	4	10	20
Cost (\$)	15	3	6	12	30	60

5. A plant grows 4 cm every 3 weeks.

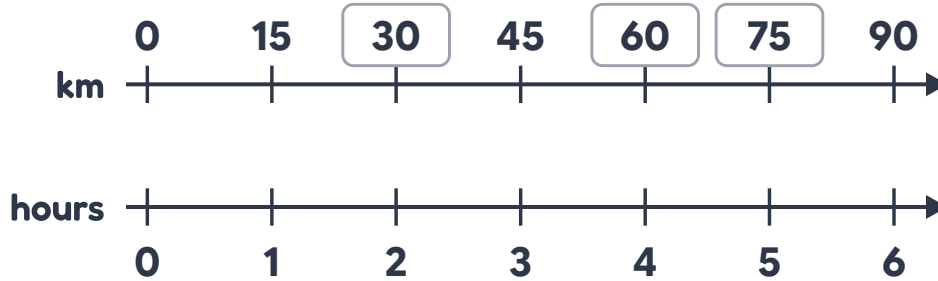
Growth (cm)	4	8	16	24	36	48
Time (weeks)	3	6	12	18	27	36

Equivalent Ratios and Rates

Complete each double number line. Then answer the question.

1. A cyclist rides 15 km in 1 hour.

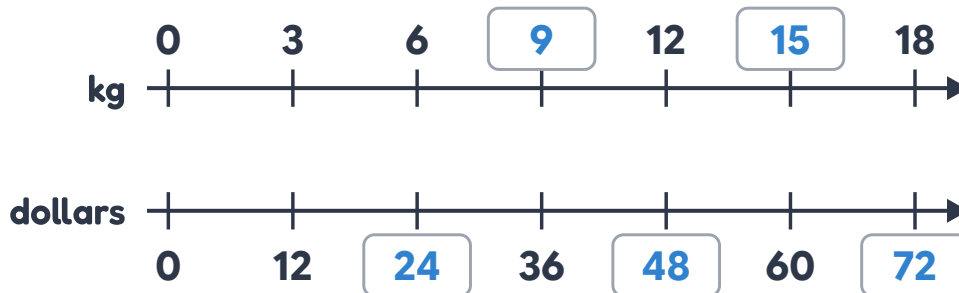
Example



How far does the cyclist ride in 10 hours?

150 km

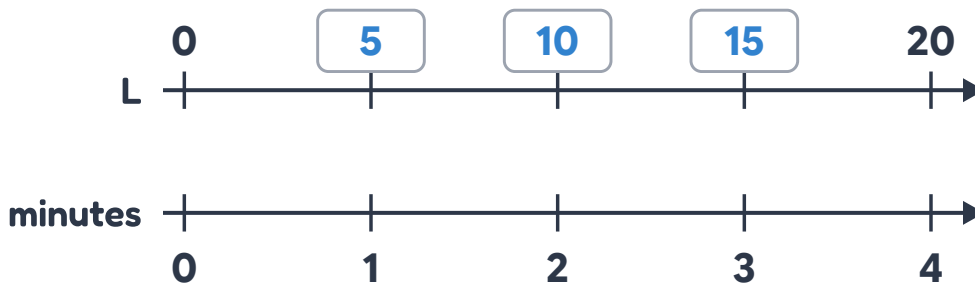
2. 3 kg of apples cost \$12.



How much does 1 kg of apples cost?

\$ 4

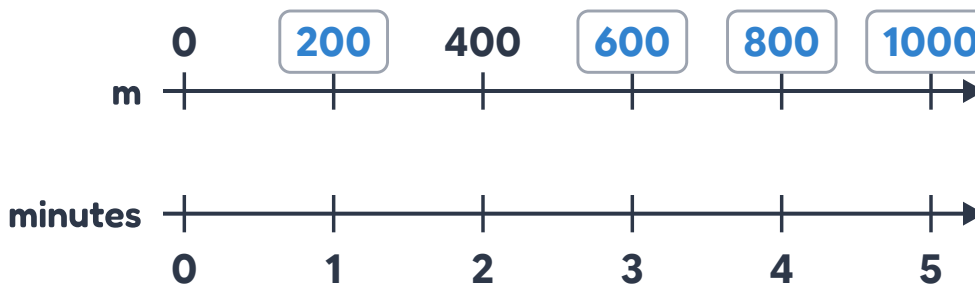
3. A tap fills a tub with 20 L of water in 4 minutes.



How many liters does the tap fill in 9 minutes?

45 L

4. A runner runs 400 m in 2 minutes.



How far does the runner run in 8 minutes?

1600 m

Equivalent Ratios and Rates

Scale ratios up and down. Write ratios as percents.

Write the missing number. Write $\times$ or $\div$ on the arrow. Example

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$\xrightarrow{\times 4}$

2. $24 : 30 = 4 : \boxed{5}$

$\xrightarrow{\div 6}$

3. $2 : 7 = 10 : \boxed{35}$

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4. $36 : 48 = \boxed{3} : 4$

$\xrightarrow{\div 12}$

5. $4 : 9 = \boxed{16} : 36$

$\xrightarrow{\times 4}$

6. $50 : 20 = 5 : \boxed{2}$

$\xrightarrow{\div 10}$

7. $7 : 3 = 28 : \boxed{12}$

$\xrightarrow{\times 4}$

8. $45 : 15 = \boxed{15} : 5$

$\xrightarrow{\div 3}$

Write each ratio as a rate out of 100. Then write the percent.

9. $1:2 = \boxed{50} : 100 = \boxed{50} \%$

10. $3:5 = \boxed{60} : 100 = \boxed{60} \%$

11. $1:4 = \boxed{25} : 100 = \boxed{25} \%$

12. $7:20 = \boxed{35} : 100 = \boxed{35} \%$

13. $9:10 = \boxed{90} : 100 = \boxed{90} \%$

14. $12:25 = \boxed{48} : 100 = \boxed{48} \%$

Circle every ratio that is equivalent to the first one.

15. $2:3$ | $4:6$ $3:2$ $6:9$ $8:10$ $10:15$ $5:6$ $20:30$

16. $5:4$ | $10:8$ $4:5$ $15:12$ $25:16$ $20:16$ $9:8$ $50:40$

Equivalent Ratios and Rates

Find each unit rate. Then use unit rates to solve.

Find the unit rate.

Example

1. 180 km in 3 hours

60 km per hour

2. \$12.00 for 4 notebooks

\$ 3.00 per notebook

3. 24 L in 6 minutes

4 L per minute

4. \$4.50 for 3 kg of apples

\$ 1.50 per kg

5. 350 m in 5 minutes

70 m per minute

6. \$7.20 for 6 muffins

\$ 1.20 per muffin

7. 450 g of flour for 9 pancakes

50 g per pancake

8. \$2.40 for 4 L of milk

\$ 0.60 per liter

Use the unit rate to solve.

9. One pen costs \$1.25. How much do 6 pens cost?

\$ 7.50

10. A bus travels 80 km in 1 hour. How far does it travel in 4 hours?

320 km

11. Rice costs \$2.40 for 1 kg. How much do 5 kg cost?

\$ 12.00

12. A pump moves 15 L of water every minute. How many minutes does it take to move 90 L?

6 minutes

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Find the better buy. Then solve the word problems.

Find each unit price. Circle the better buy.

Example

1. Juice

2 L for \$3.00

\$ 1.50 per L

3 L for \$4.20

\$ 1.40 per L

2. Pencils

12 pencils for \$3.00

\$ 0.25 per pencil

8 pencils for \$2.40

\$ 0.30 per pencil

3. Rice

5 kg for \$9.50

\$ 1.90 per kg

2 kg for \$3.60

\$ 1.80 per kg

Solve.

4. A recipe uses 3 cups of flour for every 2 cups of milk. How many cups of flour go with 8 cups of milk?

12 cups

5. In a class, the ratio of boys to girls is 4:5. There are 20 girls. How many boys are there?

16 boys

6. A cyclist rides 45 km in 3 hours. At the same speed, how far does she ride in 5 hours?

75 km

7. Out of 25 students, 15 play soccer. What percent of the students play soccer?

60 %