

MPM 1DI: *Ratio, Rates and Proportions*

1. Simplify the following ratios:

a) 4:12	b) 15:10	c) 24:60	d) 40:100
e) 27:45	f) 21:63	g) 48:234	h) 18:36:60
i) 27:63:108	j) 0.5:3.2	k) 0.75:0.9	l) $\frac{2}{3} : \frac{3}{4}$

2. State 2 equivalent ratios for:

a) 7:9	b) 8:24	c) 25:15
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3. Express, in simplest form, a ratio for each of the following:
 (Remember: 1 m = 100 cm 1 m = 1000 mm 1 cm = 10 mm)

a) 15 cm to 35 cm	b) 5 m to 26 cm	c) 8 cm to 100 mm	d) 1 m to 5 mm
e) 40 min to 50 min	f) 18 min to 1 hour	g) 3 yrs to 15 months	h) 300 m to 6 km
i) 2 mm to 30 cm to 4 m			

4. Express each of the following as rates:

a) 480 m in 5 sec	b) \$250 for 20 hrs	c) 72 kg for \$2.40	d) 65 cm in $2\frac{1}{2}$ min
e) 504 words in 6 min	f) 864 km in $2\frac{1}{4}$ hrs		

5. There are 5 dimes, 10 quarters and 15 nickels in my wallet.
 - a) What is the ratio of nickels to dimes to quarters?
 - b) What is the ratio of the value of the dimes to the value of the quarters to the value of the nickels?

6. Find the unknown value in each of the following proportions:

a) $\frac{a}{50} = \frac{12}{100}$	b) $\frac{25}{b} = \frac{5}{4}$	c) $\frac{16}{40} = \frac{c}{10}$	d) $\frac{5}{12} = \frac{45}{d}$
e) $\frac{2}{5} = \frac{e}{6}$	f) $\frac{f}{20} = \frac{56}{50}$	g) 15:7 = g:21	h) 12:8 = 30:h
i) 7:4 = x:6	j) 2:3:4 = 8:x:y	k) 5:x:15 = 10:20:y	l) 33:12:x = y:8:20

7. If the area of a square 25 cm², what is the ratio of its sides?

8. The ratio of the lengths of two squares is 3:4. What is the ratio of their areas?

ANSWERS

1 a) 1:3	b) 3:2	c) 2:5	d) 2:5
e) 3:5	f) 3:5	g) 2:5	h) 3:6:10
i) 8:9	j) 5:6	k) 5:32	l) 3:7:12
3 a) 3:7			
b) 250:13	c) 4:5	d) 200:1	e) 4:5
f) 3:10			
3 g) 12:5			
h) 1:20	i) 1:150:2000		
4 a) 96 m/s			
b) \$12.50/h	c) 30 kg/\$	d) 26 cm/min	e) 84 words/min
f) 384 km/h			
5 a) 3:1:2			
b) 2:10:3			
6 a) 6			
b) 20	c) 4	d) 108	e) $\frac{5}{12}$
f) $\frac{112}{5}$			
7. 1:1			
8. 9:16			
7. 45			
g) 20	h) $\frac{2}{21}$	i) $x = 12, y = 16$	j) $x = 10, y = 30$
k) $x = 30, y = 22$			

