

## UNIT 7 *Ratio and Proportion*

## Overhead Slides

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### **Overhead Slides**

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**OS 7.1***Simplifying Ratios*

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Simplify the following ratios:

(a)  $4 : 8 =$

(b)  $5 : 20 =$

(c)  $9 : 45 =$

(d)  $25 : 40 =$

(e)  $8 : 36 =$

(f)  $6 : 21 =$

(g)  $11 : 44 =$

**OS 7.2***Writing Ratios in the Form 1 : n*

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Write the ratios below in the form  $1 : n$ .

(a)  $2 : 10 =$

(b)  $5 : 70 =$

(c)  $5 : 9 =$

(d)  $10 : 11 =$

(e)  $10 : 42 =$

(f)  $5 : 3 =$

(g)  $4 : 3 =$

**OS 7.3***Map Ratios*

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A map of Europe is drawn with a scale of 1 : 200 000.

(A) Calculate the actual distance, in km, that the following lengths on the map represent:

(a) 1 cm,

(b) 20 cm.

(B) The actual distance between two cities, Budapest and Warsaw, is 600 km. What is the distance between these two cities on the map?

**OS 7.4***Direct Proportion*

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1. If 20 calculators cost £170, calculate the cost of 7 calculators.

20 calculators cost                    £170

1 calculator costs

7 calculators cost

2. If 500 balls cost £60, calculate the cost of 800 balls.

500 balls cost                    £60

1 ball costs

800 balls cost

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*n* balls cost

## OS 7.5

*Proportional Division*

(A) Divide £70 between Josh and Mary in the ratio 9 : 5.

$$9 + 5 = \boxed{\phantom{00}}$$

So divide £70 into  $\boxed{\phantom{00}}$  equal parts.

$$£70 \div \boxed{\phantom{00}} = \boxed{\phantom{00}}$$

Joshua's share is  $9 \times \boxed{\phantom{00}} = \boxed{\phantom{00}}$

Mary's share is  $5 \times \boxed{\phantom{00}} = \boxed{\phantom{00}}$

(B) Hannah, Ben and Emma have 90 sweets. They decide to divide them in the ratio of their ages, which are 2 years, 7 years and 9 years.

$$2 + 7 + 9 = \boxed{\phantom{00}}$$

So divide 90 into  $\boxed{\phantom{00}}$  equal parts.

$$90 \div \boxed{\phantom{00}} = \boxed{\phantom{00}}$$

Hannah's share is  $2 \times \boxed{\phantom{00}} = \boxed{\phantom{00}}$

Ben's share is  $7 \times \boxed{\phantom{00}} = \boxed{\phantom{00}}$

Emma's share is  $9 \times \boxed{\phantom{00}} = \boxed{\phantom{00}}$



**OS 7.7***Distance Conversion*

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If one yard is approximately equal to 90 cm, convert:

- (a) 5 yards to cm,
  
  
  
  
  
  
  
  
  
  
- (b) 17 yards to cm,
  
  
  
  
  
  
  
  
  
  
- (c) 630 cm to yards,
  
  
  
  
  
  
  
  
  
  
- (d) 558 cm to yards.



**OS 7.8***Inverse Proportion*

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- (A) Joshua runs home from school, a distance of 8 km. Complete the table below to show the times he takes if he runs at different speeds.

<i>Speed</i>	<i>Time</i>
8 km/h	
6 km/h	
5 km/h	
4 km/h	

- (B) At a warehouse, one person packs 15 orders in one hour. How long does it take:
- (a) 4 people to pack 120 orders,
- (b) 6 people to pack 30 orders,
- (c) 10 people to pack 1500 orders ?