#### Addition

First add the hours. Then add the minutes.

I Add.

### Example

$$\frac{2}{h} + \frac{2}{h} = \frac{4}{h}h$$

$$15 \text{ mins} + 20 \text{ mins} = 35 \text{ mins}$$

$$\frac{4}{h} + \frac{35}{mins} = \frac{4}{h} + \frac{35}{mins}$$

a 
$$3h 25 mins + 5h 30 mins = ?$$

$$=$$
  $\frac{8}{h}$   $\frac{55}{mins}$ 

$$\frac{3}{h} + \frac{5}{h} = \frac{8}{h}$$

$$\frac{25}{\text{mins}} + \frac{30}{\text{mins}} = \frac{55}{\text{mins}}$$

$$\frac{8}{h} + \frac{55}{mins} = \frac{8}{h} + \frac{55}{mins}$$

**b** 
$$7h\ 30 \,\text{mins} + 3h\ 14 \,\text{mins} = ?$$

$$= 10 h 44 mins$$

$$\frac{7}{h} + \frac{3}{h} = \frac{10}{h}$$

$$\frac{30}{\text{mins}} + \frac{14}{\text{mins}} = \frac{44}{\text{mins}}$$

$$\frac{10}{10}$$
 h +  $\frac{44}{10}$  mins =  $\frac{10}{10}$  h  $\frac{44}{10}$  mins

$$= \frac{3}{h} = \frac{59}{mins}$$

$$\frac{2}{h} + \frac{1}{h} = \frac{3}{h}$$

$$\frac{50}{1}$$
 mins +  $\frac{9}{1}$  mins =  $\frac{59}{1}$  mins

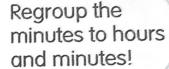
$$\frac{3}{h} + \frac{59}{mins} = \frac{3}{h} + \frac{59}{mins}$$

#### 2 Add.

a  $20 \,\mathrm{mins} + 55 \,\mathrm{mins} = \frac{75}{20} \,\mathrm{mins}$ 

$$\frac{75}{\text{mins}} = \frac{1}{\text{h}} + \frac{15}{\text{mins}}$$







**b**  $55 \, \text{mins} + 45 \, \text{mins} = \frac{100}{100} \, \text{mins}$ 

$$\frac{100}{\text{mins}} = \frac{1}{\text{h}} \frac{40}{\text{mins}}$$

c  $4h 46 \text{ mins} + 2h 14 \text{ mins} = \frac{6}{4} h \frac{60}{4} \text{ mins}$ 

$$= \frac{7}{h}$$

**d** Ih 48 mins + 3 h 35 mins =  $\frac{4}{h}$  h  $\frac{83}{mins}$  mins

$$= \frac{5}{h} = \frac{23}{mins}$$

3 Farha spends 50 minutes practising the piano. She then spends 2 h 15 mins doing her homework. How long does she spend on the two tasks in total?

$$50 \, \text{mins} + 2 \, \text{h} \, 15 \, \text{mins} = ?$$

$$65 \, \text{mins} = 1 \, \text{h} \, 5 \, \text{mins}$$

Ih 5 mins + 2 h = 3 h 5 minsShe spends 3 h 5 mins on the two tasks in total.

## **Practice 4**

#### **Subtraction**



First subtract the hours. Then subtract the minutes.

1 Subtract.

#### Example

$$7h 20 mins - 3h 10 mins = ?$$

$$\frac{7}{1}h - \frac{3}{1}h = \frac{4}{1}h$$

$$\underline{20}$$
 mins  $-\underline{10}$  mins  $=\underline{10}$  mins

$$\frac{4}{h} + \frac{10}{mins} = \frac{4}{h} + \frac{10}{mins}$$

a 8h 20 mins - 7h 15 mins = ?

$$=$$
  $\frac{1}{h}$   $\frac{5}{mins}$ 

$$\frac{8}{9}h - \frac{7}{9}h = \frac{1}{9}h$$

$$\frac{20}{15}$$
 mins =  $\frac{5}{15}$  mins

$$\frac{1}{h} + \frac{5}{mins} = \frac{1}{h} + \frac{5}{mins}$$

**b** 4h 35 mins - 1h 15 mins = ?

$$=$$
  $\frac{3}{h}$   $\frac{20}{mins}$ 

$$\frac{4}{h} - \frac{1}{h} = \frac{3}{h}$$

$$\frac{35}{\text{mins}} = \frac{20}{\text{mins}}$$

$$\frac{3}{2}$$
 h +  $\frac{20}{2}$  mins =  $\frac{3}{2}$  h  $\frac{20}{2}$  mins

c 3h 55 mins - 2h 30 mins = ?

$$\frac{3}{h} - \frac{2}{h} = \frac{1}{h}$$

$$\frac{55}{\text{mins}} - \frac{30}{\text{mins}} = \frac{25}{\text{mins}}$$

$$h + \frac{25}{25}$$
 mins =  $\frac{1}{1}$  h  $\frac{25}{25}$  mins

2 Subtract

a 
$$2h 20 \text{mins} - 1h 50 \text{mins} = 1 h 80 \text{mins} - 1 h 50 \text{mins}$$

$$= 30 \text{mins}$$

$$= 30 \text{mins}$$

b 5h I5 mins - 2h 25 mins = 
$$\frac{4}{h} h \frac{75}{mins} - \frac{2}{h} h \frac{25}{mins}$$
 mins =  $\frac{2}{h} h \frac{50}{mins}$  mins

c 4h 30 mins - 2h 35 mins = 
$$\frac{3}{h} + \frac{90}{mins} = \frac{2}{h} + \frac{35}{mins} = \frac{1}{h} + \frac{55}{mins} = \frac{1}{h} + \frac{55}{mins} = \frac{1}{h} + \frac{1}{h} = \frac{1}{h} + \frac{1}{h} = \frac{1}{h} = \frac{1}{h} + \frac{1}{h} = \frac{1}{h} =$$

d 6h 10 mins – 1h 55 mins = 
$$\frac{5}{h}$$
 h  $\frac{70}{mins}$  mins  $\frac{1}{h}$  mins =  $\frac{4}{h}$  h  $\frac{15}{mins}$  mins

e 9h 40 mins - 4h 45 mins = 
$$\frac{8}{h}$$
 h  $\frac{100}{h}$  mins -  $\frac{4}{h}$  h  $\frac{45}{h}$  mins =  $\frac{4}{h}$  h  $\frac{55}{h}$  mins

3 Mrs Taylor takes 3 h 5 mins to cook dinner. Mr Johnson takes 2 h 40 mins to cook dinner. How much longer does Mrs Taylor take to cook dinner than Mr Johnson?

3h 5 mins - 2h 40 mins = ?
First regroup 3h 5 mins: 3h 5 mins = 2h 65 mins
Subtract: 2h 65 mins - 2h 40 mins = 25 mins
Mrs Taylor takes 25 mins longer than Mr Johnson.

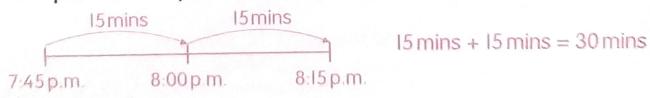
#### Practice 5

#### **Duration in hours and minutes**

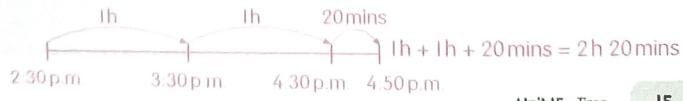
- Fill in the spaces with the time. What time is:
  - a 2 hours after 8:00 p.m.? 10:00 p.m.
  - **b** 3 hours before 6:40 a.m.? <u>3:40 a.m.</u>
  - c 30 minutes after 1:36 p.m.? 2:06 p.m.
  - d 45 minutes before 7:05 a.m.? 6:20 a.m.
  - e 3 hours after 10:25 a.m.? 1:25 p.m.
  - f 2 hours before 1:20 p.m.? II:20 a.m.
- 2 Draw a timeline to find the duration. Fill in the spaces.

# 2:30 p.m. to 3:15 p.m. 45 mins 30 mins 15 mins 30 mins + 15 mins = 45 mins 2:30 p.m. 3:00 p.m. 3:15 p.m.

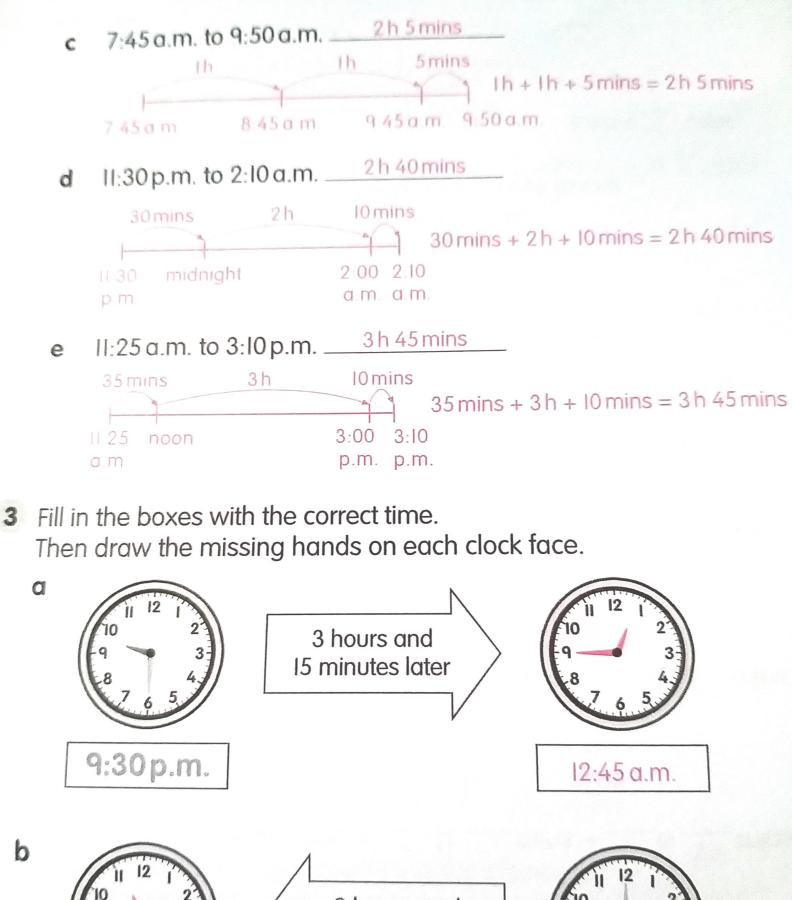
a 7:45 p.m. to 8:15 p.m. 30 mins

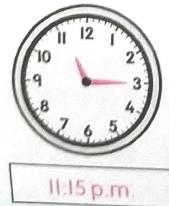


**b** 2:30 p.m. to 4:50 p.m. 2h 20 mins



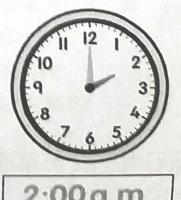
Unit 15: Time





b

2 hours and 45 minutes earlier



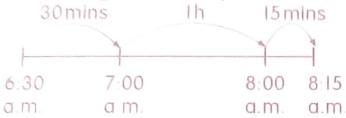
2:00 a.m.

Solve these word problems. Draw a timeline to help you.

A Mr Graham exercises every morning.

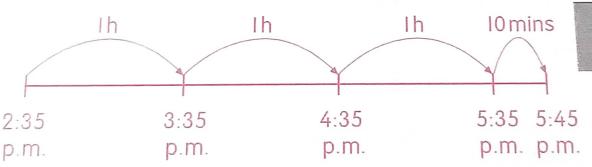
He starts at 6:30 a.m. and finishes at 8:15 a.m.

How long does he spend exercising each morning?



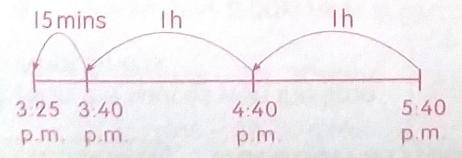
30 mins + 1h + 15 mins = 1h 45 mins He spends 1h 45 mins exercising each morning.

5 Ella starts reading a book at 2:35 p.m. It takes her 3 h 10 mins to finish reading the book. What time does she finish reading the book?



She finishes reading the book at 5:45 p.m.

6 Peter goes to the library. He is there for 2 h 15 mins. He leaves the library at 5:40 p.m. What time did he go to the library?

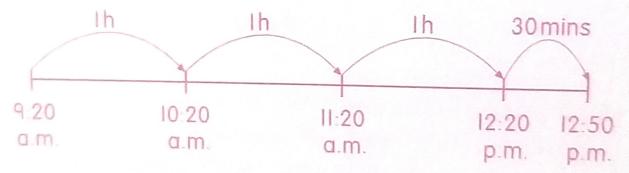


7 Omar is at his friend's house from II:50 a.m. to 3:15 p.m. How long is his visit?



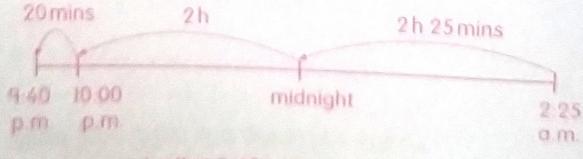
His visit is 3 h 25 mins long.

8 Mr Kahn travels to London by train. The journey takes 3 h 30 mins. His train leaves at 9:20 a.m. What time does he arrive in London?



He arrives at 12:50 p.m.

9 Mrs Kemp's flight landed at Heathrow at 2:25 a.m. Her flight took 4h 45 mins. What time did her plane take off?



Her plane took off at 9.40 p.m.