TIME

A UNITS OF TIME

A.1 CHOOSING THE RIGHT UNITS OF TIME

MCQ 1: Which unit would you use to measure the time it takes to run 100 meters?

Check one answer:

☒ Seconds

☐ Minutes

☐ Hours

☐ Days

☐ Weeks

☐ Months

☐ Years

Answer:

- Running 100 meters is a very quick event.
- We need a small unit of time to measure it.
- The best unit is **seconds**. Yay!
- Answer: **seconds**.

MCQ 2: Which unit would you use to measure the time it takes to clean up your bedroom?

Check one answer:

☐ Seconds

☒ Minutes

☐ Hours

☐ Days

☐ Weeks

☐ Months

☐ Years

Answer:

- Cleaning up a bedroom takes a short time, like 10 to 30 minutes.
- We need a unit that's not too small or too big to measure it.
- The best unit is **minutes**. Yay!
- Answer: **minutes**.

MCQ 3: Which unit would you use to measure your age?

Check one answer:

☐ Seconds

☐ Minutes

☐ Hours

☐ Days

☐ Weeks

☐ Months

☒ Years

Answer:

- Your age is how many years you've lived, like 8 or 9 years.
- We need a unit that measures a long time for people.
- The best unit is **years**. Yay!
- Answer: **years**.

MCQ 4: Which unit would you use to measure the time it takes to watch a movie?

Check one answer:

☐ Seconds

☐ Minutes

☒ Hours

☐ Days

Answer:

- Watching a movie takes a medium amount of time, like 1 to 2 hours.
- We need a unit that's not too small or too big to measure it.
- The best unit is **hours**. Yay!
- Answer: **hours**.

MCQ 5: Which unit would you use to measure the time it takes to go on a family camping trip?

Check one answer:

☐ Seconds

☐ Minutes

☐ Hours

☒ Days

Answer:

- A family camping trip usually takes a few days, like 3 to 5 days.
- We need a unit that measures a few days, not too short or too long.
- The best unit is **days**. Yay!
- Answer: **days**.

B CONVERTING UNITS OF TIME

B.1 CONVERTING UNITS OF TIME FROM BIGGER TO SMALLER

Ex 6: Convert 2 hours to minutes:

$$2 \text{ h} = \boxed{120} \text{ min}$$

Answer:

$$2\,\text{h} = 2 \times 60\,\text{min}$$
$$= 120\,\text{min}$$

Ex 7: Convert 3 days to hours:

$$3 \text{ d} = \boxed{72} \text{ h}$$

Answer:

$$3\,\text{d} = 3 \times 24\,\text{h}$$
$$= 72\,\text{h}$$

Ex 8: Convert 5 minutes to seconds:

$$5 \text{ min} = \boxed{300} \text{ s}$$

Answer:

$$5\,\text{min} = 5 \times 60\,\text{s}$$
$$= 300\,\text{s}$$

Ex 9: Convert 2 weeks to days:

$$2 \text{ wk} = \boxed{14} \text{ d}$$

Answer:

$$2\,\text{wk} = 2 \times 7\,\text{d}$$
$$= 14\,\text{d}$$

B.2 CONVERTING UNITS OF TIME FROM SMALLER TO BIGGER

Ex 10: Convert 120 seconds to minutes:

$$120 \text{ s} = \boxed{2} \text{ min}$$

Answer:

$$120\,\text{s} = 120 \div 60\,\text{min}$$
$$= 2\,\text{min}$$

Ex 11: Convert 24 hours to days:

$$24 \text{ h} = \boxed{1} \text{ d}$$

Answer:

$$24\,\text{h} = 24 \div 24\,\text{d}$$
$$= 1\,\text{d}$$

Ex 12: Convert 180 minutes to hours:

$$180 \text{ min} = \boxed{3} \text{ h}$$

Answer:

$$180\,\text{min} = 180 \div 60\,\text{h}$$
$$= 3\,\text{h}$$

Ex 13: Convert 14 days to weeks:

$$14 \text{ d} = \boxed{2} \text{ wk}$$

Answer:

$$14\,\text{d} = 14 \div 7\,\text{wk}$$
$$= 2\,\text{wk}$$

B.3 DIVIDING TIME

Ex 14: If you divide an hour into two equal periods, how many minutes is one half hour?

$$\text{One half hour} = \boxed{30} \text{ minutes}$$

Answer:

- An hour has 60 minutes.
- We divide it into two equal periods.
- Splitting 60 by 2 gives: $60 \div 2 = 30$.
- One half hour is 30 minutes.

Ex 15: If you divide an hour into four equal periods, how many minutes is one quarter hour?

$$\text{One quarter hour} = \boxed{15} \text{ minutes}$$

Answer:

- An hour has 60 minutes.
- We divide it into four equal periods.
- Splitting 60 by 4 gives: $60 \div 4 = 15$.
- One quarter hour is 15 minutes.

Ex 16: If you divide a day into two equal periods, how many hours is half of a day?

$$\text{Half of a day} = \boxed{12} \text{ hours}$$

Answer:

- A day has 24 hours.
- We divide it into two equal periods.
- Splitting 24 by 2 gives: $24 \div 2 = 12$.
- Half of a day is 12 hours.

C CONVERTING 1 UNIT INTO 2 UNITS

C.1 CONVERTING 2 UNITS INTO 1 UNIT

Ex 17: A movie lasts 1 hour 45 minutes. How many minutes is that?

$$1 \text{ h } 45 \text{ min} = \boxed{105} \text{ min}$$

Answer:

- One hour is 60 minutes. Add the extra 45 minutes to find the total.
- Calculate:

$$\begin{aligned} 1\,\text{h}\,45\,\text{min} &= 1 \times 60\,\text{min} + 45\,\text{min} \\ &= 60\,\text{min} + 45\,\text{min} \\ &= 105\,\text{min} \end{aligned}$$

Ex 18: You hold your breath for 2 minutes 20 seconds. How many seconds is that?

$$2 \text{ min } 20 \text{ s} = \boxed{140} \text{ s}$$

Answer:

- 2 minutes is 120 seconds. Add the extra 20 seconds to find the total.
- Calculate:

$$\begin{aligned} 2\,\text{min}\,20\,\text{s} &= 2 \times 60\,\text{s} + 20\,\text{s} \\ &= 120\,\text{s} + 20\,\text{s} \\ &= 140\,\text{s} \end{aligned}$$

Ex 19: Your soccer practice lasts 1 hour 30 minutes. How many minutes is that?

$$1 \text{ h } 30 \text{ min} = \boxed{90} \text{ min}$$

Answer:

- One hour is 60 minutes. Add the extra 30 minutes to find the total.
- Calculate:

$$\begin{aligned} 1\,\text{h}\,30\,\text{min} &= 1 \times 60\,\text{min} + 30\,\text{min} \\ &= 60\,\text{min} + 30\,\text{min} \\ &= 90\,\text{min} \end{aligned}$$

Ex 20: A trail running race lasts 1 day 5 hours. How many hours is that?

$$1 \text{ d } 5 \text{ h} = \boxed{29} \text{ h}$$

Answer:

- One day is 24 hours. Add the extra 5 hours to find the total.
- Calculate:

$$\begin{aligned} 1\,\text{d}\,5\,\text{h} &= 1 \times 24\,\text{h} + 5\,\text{h} \\ &= 24\,\text{h} + 5\,\text{h} \\ &= 29\,\text{h} \end{aligned}$$

C.2 CONVERTING 1 UNIT INTO 2 UNITS

Ex 21: You read a book for 100 minutes. How many hours and minutes is that?

$$100 \text{ min} = \boxed{1} \text{ h} + \boxed{40} \text{ min}$$

Answer:

- One hour is 60 minutes. Divide 100 by 60 to find how many hours, and the rest is minutes.
- Divide:

$$\begin{array}{r} 1 \\ 60\overline{)100} \\ \underline{60} \\ 40 \end{array}$$

- You get 1 hour, with 40 minutes left over, so:

$$\begin{aligned} 100\,\text{min} &= (1 \times 60\,\text{min}) + 40\,\text{min} \\ &= 1\,\text{h} + 40\,\text{min} \end{aligned}$$

Ex 22: You run a race for 140 seconds. How many minutes and seconds is that?

$$140 \text{ s} = \boxed{2} \text{ min} + \boxed{20} \text{ s}$$

Answer:

- One minute is 60 seconds. Divide 140 by 60 to find how many minutes, and the rest is seconds.
- Divide:

$$\begin{array}{r} 2 \\ 60\overline{)140} \\ \underline{120} \\ 20 \end{array}$$

- You get 2 minutes, with 20 seconds left over, so:

$$\begin{aligned} 140\,\text{s} &= (2 \times 60\,\text{s}) + 20\,\text{s} \\ &= 2\,\text{min} + 20\,\text{s} \end{aligned}$$

Ex 23: You study for 150 minutes. How many hours and minutes is that?

$$150 \text{ min} = \boxed{2} \text{ h} + \boxed{30} \text{ min}$$

Answer:

- One hour is 60 minutes. Divide 150 by 60 to find how many hours, and the rest is minutes.
- Divide:

$$\begin{array}{r} 2 \\ 60\overline{)150} \\ \underline{120} \\ 30 \end{array}$$

- You get 2 hours, with 30 minutes left over, so:

$$\begin{aligned} 150\,\text{min} &= (2 \times 60\,\text{min}) + 30\,\text{min} \\ &= 2\,\text{h} + 30\,\text{min} \end{aligned}$$

Ex 24: You swim for 200 seconds. How many minutes and seconds is that?

$$200\ \text{s} = \boxed{3}\ \text{min} + \boxed{20}\ \text{s}$$

Answer:

- One minute is 60 seconds. Divide 200 by 60 to find how many minutes, and the rest is seconds.
- Divide:

$$\begin{array}{r} 3 \\ 60\overline{)\,200} \\ \underline{180} \\ 20 \end{array}$$

- You get 3 minutes, with 20 seconds left over, so:

$$\begin{aligned} 200\,\text{s} &= (3 \times 60\,\text{s}) + 20\,\text{s} \\ &= 3\,\text{min} + 20\,\text{s} \end{aligned}$$

D 24-HOUR TIME FORMAT

D.1 TELLING TIME THE 24-HOUR WAY

Ex 25: Your favorite show starts at 6:15 PM. What time is it in 24-hour time?

$$\boxed{18}:\boxed{15}$$

Answer:

- Look at PM. Add 12 to the hours: 6 + 12 = 18.
- Keep the minutes: 15 minutes.
- Write the time: **18:15**.

Ex 26: You wake up at 7:45 AM for school. What time is it in 24-hour time?

$$\boxed{07}:\boxed{45}$$

Answer:

- Look at AM. The hours stay the same: 7 hours.
- Keep the minutes: 45 minutes.
- Write the time: **07:45**.

Ex 27: Your soccer game starts at 4:30 PM. What time is it in 24-hour time?

$$\boxed{16}:\boxed{30}$$

Answer:

- Look at PM. Add 12 to the hours: 4 + 12 = 16.
- Keep the minutes: 30 minutes.
- Write the time: **16:30**.

Ex 28: You eat dinner at 7:00 PM. What time is it in 24-hour time?

$$\boxed{19}:\boxed{00}$$

Answer:

- Look at PM. Add 12 to the hours: 7 + 12 = 19.
- Keep the minutes: 0 minutes.
- Write the time: **19:00**.

D.2 FINDING EVERYDAY TIME FROM 24-HOUR CLOCKS

Ex 29: You have breakfast at 07:30. What time is it?

$$\boxed{7}:\boxed{30}\ \boxed{\textbf{AM}}$$

Answer:

- Look at 07:30. It's less than 12:00, so the hours stay 7.
- Keep the minutes: 30 minutes.
- Times before noon are AM.
- Write the time: **7:30 AM**.

Ex 30: Your art class starts at 14:45. What time is it?

$$\boxed{2}:\boxed{45}\ \boxed{\textbf{PM}}$$

Answer:

- Look at 14:45. It's more than 12:00, so subtract 12 from the hours: 14 - 12 = 2.
- Keep the minutes: 45 minutes.
- Times after 12:00 are PM.
- Write the time: **2:45 PM**.

Ex 31: You go to bed at 20:00. What time is it?

$$\boxed{8}:\boxed{00}\ \boxed{\textbf{PM}}$$

Answer:

- Look at 20:00. It's more than 12:00, so subtract 12 from the hours: 20 - 12 = 8.
- Keep the minutes: 0 minutes.
- Times after 12:00 are PM.
- Write the time: **8:00 PM**.

Ex 32: Your music lesson starts at 15:20. What time is it?

$$\boxed{3}:\boxed{20}\ \boxed{\textbf{PM}}$$

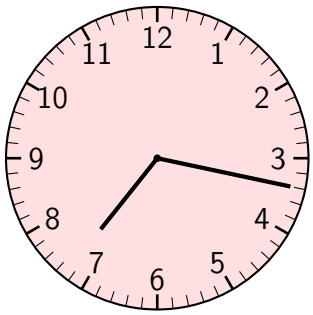
Answer:

- Look at 15:20. It's more than 12:00, so subtract 12 from the hours: 15 - 12 = 3.
- Keep the minutes: 20 minutes.
- Times after 12:00 are PM.
- Write the time: **3:20 PM**.

E READING CLOCK TIMES

E.1 READING CLOCKS

Ex 33: You leave for school at the time shown on this clock. What time is it?



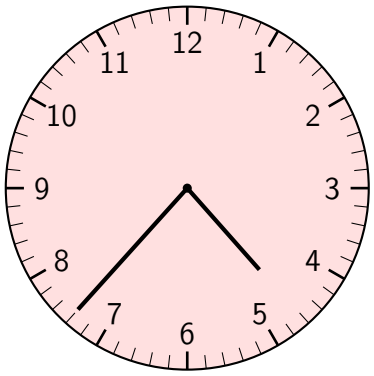
morning

7 : 17 **AM**

Answer:

- The little hand is past the 7 but not yet at the 8, so the hour is 7.
- The big hand is between the 3 and 4. The 3 means $3 \times 5 = 15$ minutes. Count 2 more marks after the 3: each mark is 1 minute, so 2 marks add 2 minutes.
- Add: 15 minutes + 2 minutes = 17 minutes.
- It's morning, so the time is **7:17 AM**.

Ex 34: Your soccer practice starts at the time shown on this clock. What time is it?



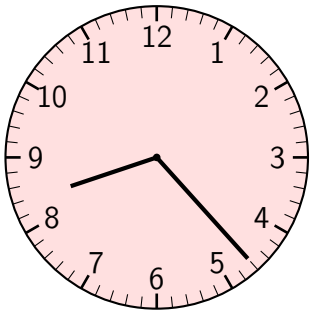
afternoon

4 : 37 **PM**

Answer:

- The little hand is past the 4 but not yet at the 5, so the hour is 4.
- The big hand is between the 7 and 8. The 7 means $7 \times 5 = 35$ minutes. Count 2 more marks after the 7: each mark is 1 minute, so 2 marks add 2 minutes.
- Add: 35 minutes + 2 minutes = 37 minutes.
- It's afternoon, so the time is **4:37 PM**.

Ex 35: You eat breakfast at the time shown on this clock. What time is it?



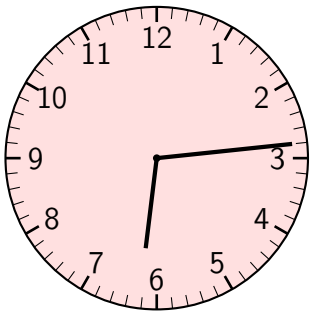
morning

8 : 23 **AM**

Answer:

- The little hand is past the 8 but not yet at the 9, so the hour is 8.
- The big hand is between the 4 and 5. The 4 means $4 \times 5 = 20$ minutes. Count 3 more marks after the 4: each mark is 1 minute, so 3 marks add 3 minutes.
- Add: 20 minutes + 3 minutes = 23 minutes.
- It's morning, so the time is **8:23 AM**.

Ex 36: You watch a movie at the time shown on this clock. What time is it?



evening

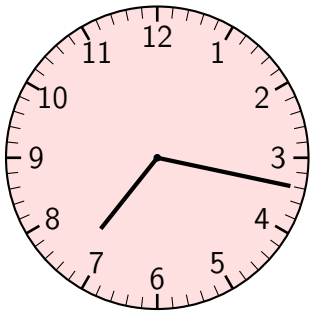
6 : 14 **PM**

Answer:

- The little hand is past the 6 but not yet at the 7, so the hour is 6.
- The big hand is between the 2 and 3. The 2 means $2 \times 5 = 10$ minutes. Count 4 more marks after the 2: each mark is 1 minute, so 4 marks add 4 minutes.
- Add: 10 minutes + 4 minutes = 14 minutes.
- It's evening, so the time is **6:14 PM**.

E.2 READING CLOCKS FOR 24-HOUR TIME

Ex 37: You leave for school at the time shown on this clock. What time is it in 24-hour format?



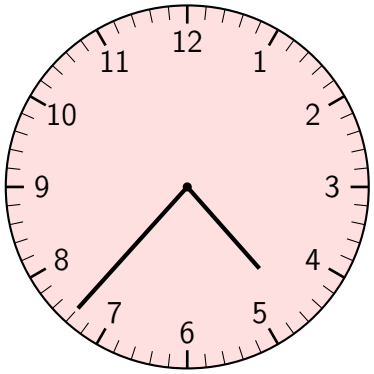
morning

07:17

Answer:

- The little hand is past the 7 but not yet at the 8, so the hour is 7.
- The big hand is between the 3 and 4. The 3 means $3 \times 5 = 15$ minutes. Count 2 more marks after the 3: each mark is 1 minute, so 2 marks add 2 minutes.
- Add: 15 minutes + 2 minutes = 17 minutes.
- It's morning, so the hours stay the same. Add a zero before 7 for 24-hour time. The time is **07:17**.

Ex 38: Your soccer practice starts at the time shown on this clock. What time is it in 24-hour format?



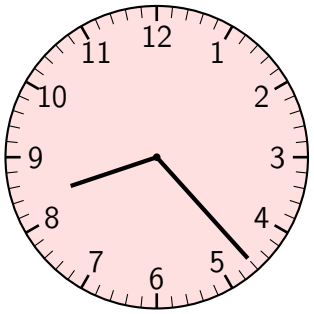
afternoon

16:37

Answer:

- The little hand is past the 4 but not yet at the 5, so the hour is 4.
- The big hand is between the 7 and 8. The 7 means $7 \times 5 = 35$ minutes. Count 2 more marks after the 7: each mark is 1 minute, so 2 marks add 2 minutes.
- Add: 35 minutes + 2 minutes = 37 minutes.
- It's afternoon, so add 12 to the hours: $4 + 12 = 16$. The time is **16:37**.

Ex 39: You eat breakfast at the time shown on this clock. What time is it in 24-hour format?



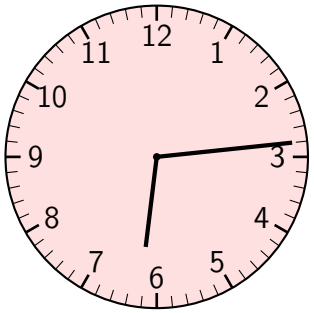
morning

08:23

Answer:

- The little hand is past the 8 but not yet at the 9, so the hour is 8.
- The big hand is between the 4 and 5. The 4 means $4 \times 5 = 20$ minutes. Count 3 more marks after the 4: each mark is 1 minute, so 3 marks add 3 minutes.
- Add: 20 minutes + 3 minutes = 23 minutes.
- It's morning, so the hours stay the same. Add a zero before 8 for 24-hour time. The time is **08:23**.

Ex 40: You watch a movie at the time shown on this clock. What time is it in 24-hour format?



evening

18:14

Answer:

- The little hand is past the 6 but not yet at the 7, so the hour is 6.
- The big hand is between the 2 and 3. The 2 means $2 \times 5 = 10$ minutes. Count 4 more marks after the 2: each mark is 1 minute, so 4 marks add 4 minutes.
- Add: 10 minutes + 4 minutes = 14 minutes.
- It's evening, so add 12 to the hours: $6 + 12 = 18$. The time is **18:14**.