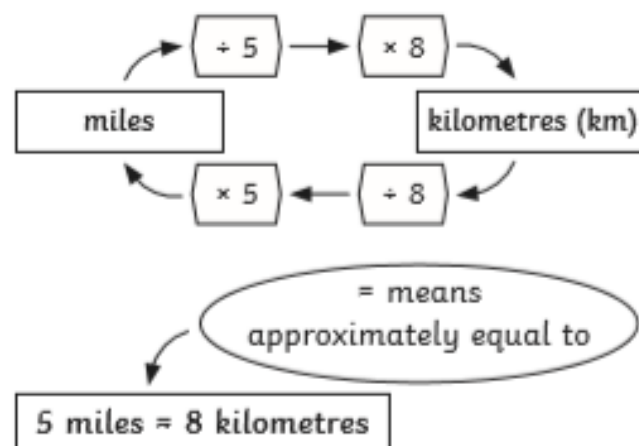**1)** Tick the statements that show a measurement you would record in miles.

- ○ The distance from London to Birmingham.
- ○ The length of a football pitch.
- ○ The length of the Amazon river.
- ○ The length of your school field.

2) Use the information below to help you convert between miles and kilometres and complete the tables.

$\div 5 \longrightarrow \times 8$

miles   kilometres (km)

$\times 5 \longleftarrow \div 8$

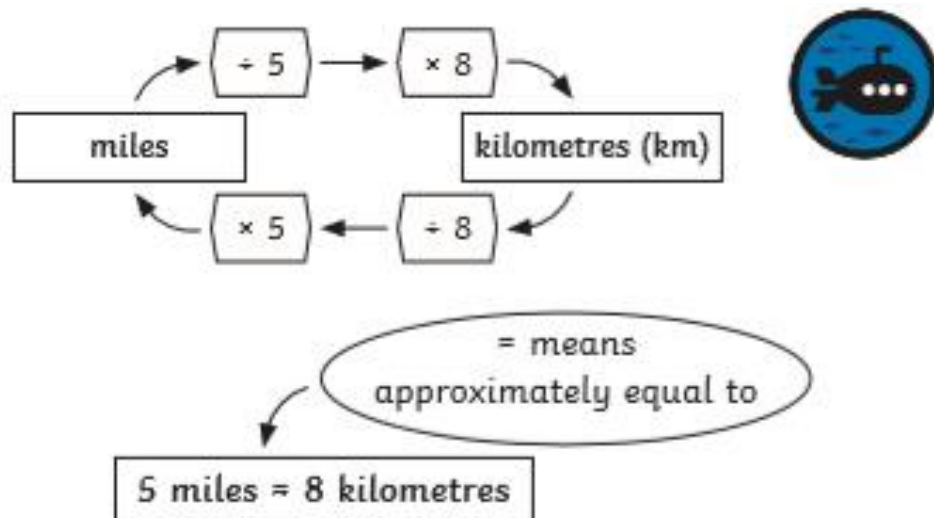= means approximately equal to

5 miles = 8 kilometres

a)

Miles	Kilometres
10	
15	
	48
100	
1	

b)

Kilometres	Miles
32	
	40
400	
	120
7.2	

```
  ┌─────┐      ┌─────┐
→ │ ÷ 5 │ ───→ │ × 8 │ ─┐
  └─────┘      └─────┘  │
┌──────────┐      ┌──────────────────┐
│  miles   │      │ kilometres (km)  │
└──────────┘      └──────────────────┘
  ┌─────┐      ┌─────┐  │
  │ × 5 │ ←──  │ ÷ 8 │ ←┘
  └─────┘      └─────┘
```

```
      ⬭ = means
   approximately equal to ⬭
            │
            ↓
┌──────────────────────────┐
│  5 miles ≈ 8 kilometres  │
└──────────────────────────┘
```

1) Are these statements always, sometimes or never true?

   a) A mile is longer than a kilometre.

   b) The distances between some places are measured in miles, others are measured in kilometres.

   c) 12km is a distance between 7-8 miles.

2) Three children have worked out approximately how many kilometres there are in 15 miles.

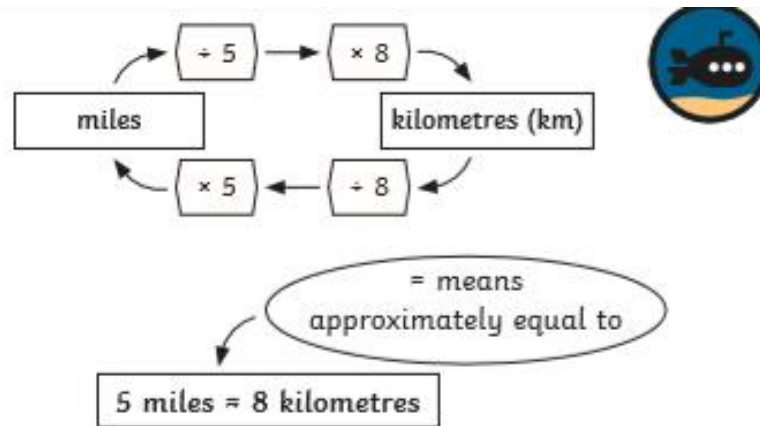   Which child do you think is correct? Explain why.

   Alice:
   15 miles = 24km

   Freya:
   24km = 15 miles

   Harry:
   15 miles = 30km

$\div 5 \rightarrow \times 8$

miles → kilometres (km)

$\times 5 \leftarrow \div 8$

= means approximately equal to

5 miles ≈ 8 kilometres

1) Team Roadracer and Team Tornado are competing in a long-distance car rally. Each driver has recorded their distances so far.

Convert each distance to the alternative unit.

Team Roadracer

Rod: 960km = _____

Rachel: 1120km = _____

Ruaridh: 2080km = _____

Team Tornado

Tod: 790 miles = _____

Trish: 1055 miles = _____

Tori: 1245 miles = _____

b) Approximately how far has Team Roadracer driven so far? Give your answer in miles.

c) Approximately how much further than Team Roadracer has Team Tornado driven so far? Give your answer in kilometres.

d) Team Roadracer has completed $\frac{4}{5}$ of the race. How long is the whole race in kilometres?

2) Team Warmwheels are taking part in a 3250 mile motorbike race. By the end of the third day, they had completed 1800km.

a) In kilometres, approximately how long is the entire race?

b) In kilometres, approximately how far did Team Warmwheels have left to drive?

On day 4, Team Warmwheels drove a further 600 kilometres. On each day that followed, they drove 40 kilometres further than the day before.

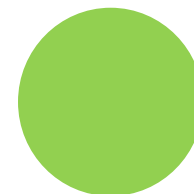c) How many days did it take Team Warmwheels to complete the whole race?

ANSWERS

1) ⊘ The distance from London to Birmingham.
   ○ The length of a football pitch.
   ⊘ The length of the Amazon river.
   ○ The length of your school field.

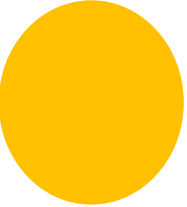2) a)

Miles	Kilometres
10	16
15	24
30	48
100	160
1	1.6

b)

Kilometres	Miles
32	20
64	40
400	250
192	120
7.2	4.5

1) a) This is always true as 1 mile ≈ 1.6km.

   b) This is never true. I can use miles or kilometres to record any distance. The reason I might choose to use miles or kilometres would probably depend on where I lived. UK for example uses miles to describe distances whereas most of Europe uses kilometres.

   c) This is always true as 12km ≈ $7\frac{1}{2}$ miles.

2) Alice is not correct as she has used = instead of ≈ .
   Freya is correct as 24km ≈ 15 miles.
   Harry is not correct as he has just doubled the number of miles to estimate the number of kilometres.

1) a) Team Roadracer:
   Rod: 960km ≈ 600 miles
   Rachel: 1120km ≈ 700 miles
   Ruaridh: 2080km ≈ 1300 miles

   Team Tornado:
   Tod: 790 miles ≈ 1264km
   Trish: 1055 miles ≈ 1688km
   Tori: 1245 miles ≈ 1992km

   b) 2600 miles

   c) Team Roadracer has driven 4160km.
   Team Tornado has driven approximately 4944km which is approximately 784km more.

   d) $4160km \div 4 = 1040km$
   $\frac{1}{5}$ of the race = 1040 km
   $1040\ km \times 5 = 5200km$
   $\frac{5}{5}$ or 1 whole race = 5200km

2) a) The entire race is approximately 5200km.

   b) Team Warmwheels had 3400km left to drive (5200km – 1800km)

   c) Day 1 to 3: 5200km – 1800km = 3400km
   Day 4: 3400km – 600km = 2800km
   Day 5: 2800km – 640km = 2160km
   Day 6: 2160km – 680km = 1480km
   Day 7: 1480km – 720km = 760km
   Day 8: 760km – 760km = 0km left to race
   It took Team Warmwheels 8 days to complete the entire race.