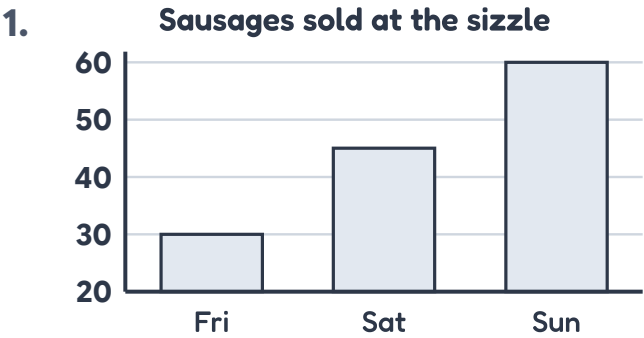


Misleading Graphs

Read each graph. How much bigger does it look? How much bigger is it?

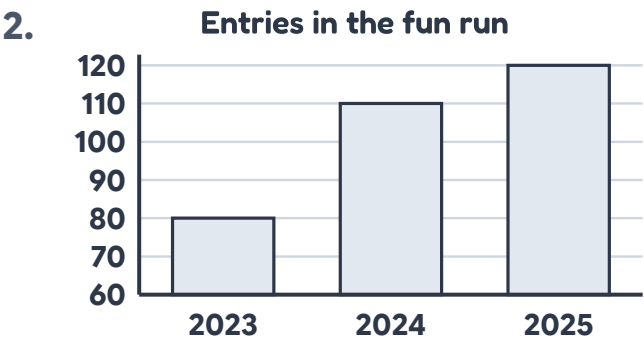


Read the real values. Example

Fri 30 Sat 45 Sun 60

Looks: Sun is 4 times Fri.

Really: Sun is 2 times Fri.

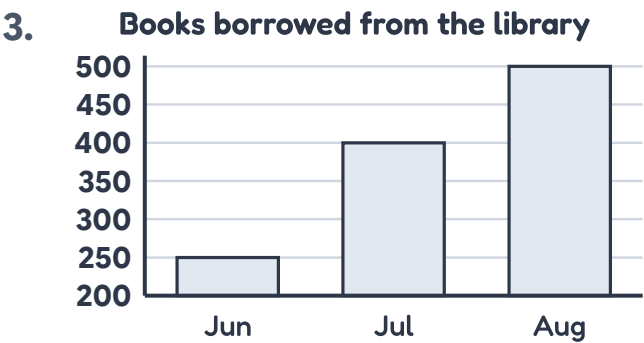


Read the real values.

2023 80 2024 110 2025 120

Looks: 2025 is 1.5 times 2023.

Really: 2025 is 1.5 times 2023.

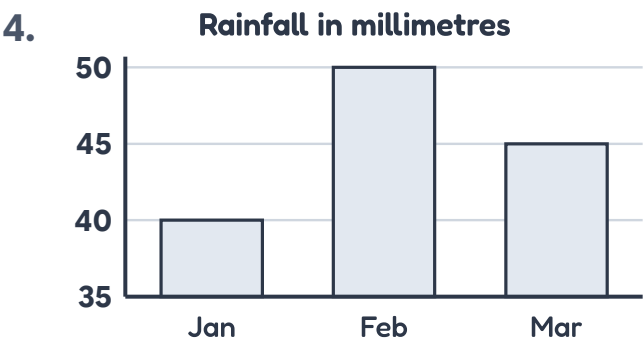


Read the real values.

Jun 250 Jul 400 Aug 500

Looks: Aug is 2 times Jun.

Really: Aug is 2 times Jun.



Read the real values.

Jan 40 Feb 50 Mar 45

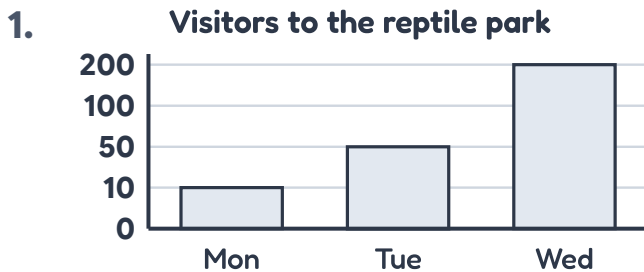
Looks: Feb is 1.25 times Jan.

Really: Feb is 1.25 times Jan.

Misleading Graphs

What is wrong with each graph? Compare it with the real values.

- A** The scale does not go up in equal steps.
B The value axis does not start at 0.
C A bigger picture is drawn for a bigger number.



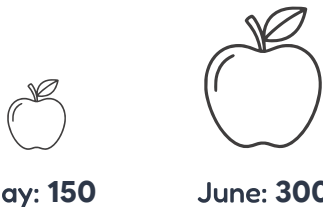
What is wrong? **A** **B** **C** Example

Mon 10 Tue 50 Wed 200

Looks: Wed is 4 times Mon.

Really: Wed is 20 times Mon.

2. **Apples sold at the market**

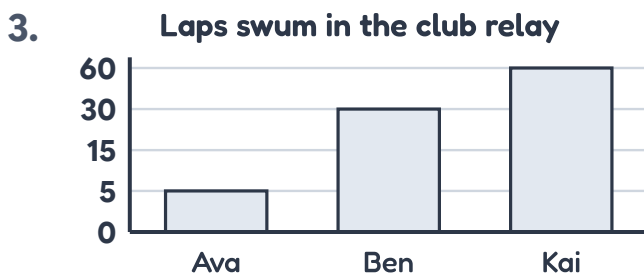


What is wrong? **A** **B** **C**

Height: June is _____ times May.

Space: June is _____ times May.

Really: June is _____ times May.



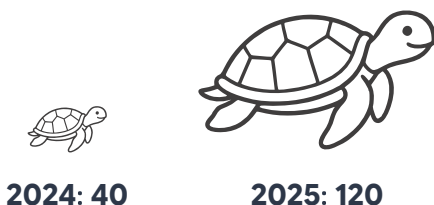
What is wrong? **A** **B** **C**

Ava _____ Ben _____ Kai _____

Looks: Kai is _____ times Ava.

Really: Kai is _____ times Ava.

4. **Turtles counted on the beach**



What is wrong? **A** **B** **C**

Height: 2025 is _____ times 2024.

Space: 2025 is _____ times 2024.

Really: 2025 is _____ times 2024.

Misleading Graphs

Is each claim fair? Circle Yes or No, then write the letter of the reason.

- A** Too few people were asked.
- B** Only one kind of person was asked.
- C** The question pushed people towards one answer.
- D** Nothing is wrong: the claim is fair.

1. **45** of the **50** people asked at the skate park said they love skateboarding.
Claim: "Most Australians love skateboarding."

Example

Fair? Yes **No**

Reason: B

2. Mia picked **4** students at random from the whole school. **3** said maths is their favourite subject.
Claim: "Most of the school likes maths best."

Fair? Yes No

Reason: _____

3. A town asked **300** people of all ages, "Do you prefer the beach or the bush?" **180** said the beach.
Claim: "Most people in the town prefer the beach."

Fair? Yes No

Reason: _____

4. **200** shoppers were asked, "Don't you agree the new car park is a waste of money?" **150** said yes.
Claim: "Most shoppers think the car park is a waste."

Fair? Yes No

Reason: _____

5. **120** fans at a football match were asked, "What is your favourite sport?" **100** said football.
Claim: "Football is the town's favourite sport."

Fair? Yes No

Reason: _____

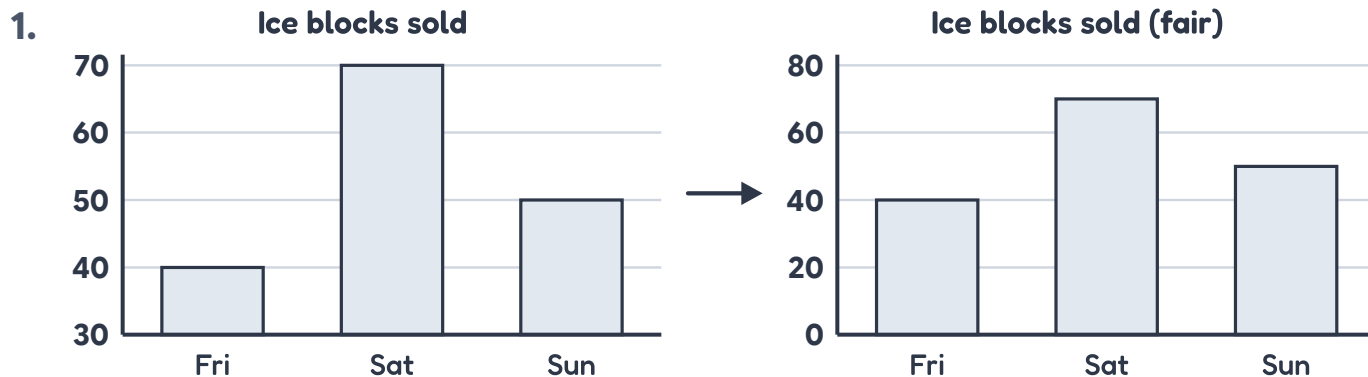
6. Every class in five schools was asked, "How do you get to school?" **152** of the **400** students come by car.
Claim: "38% of these students come by car."

Fair? Yes No

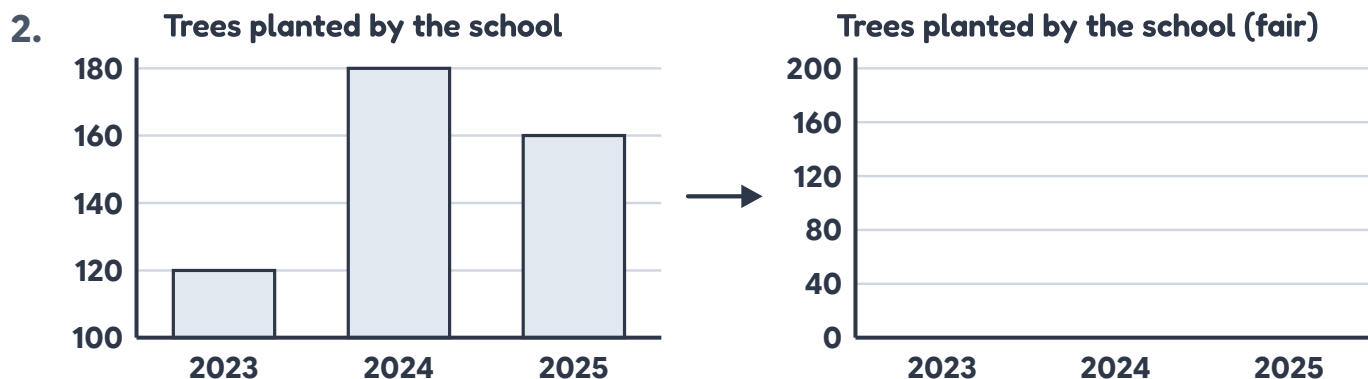
Reason: _____

Misleading Graphs

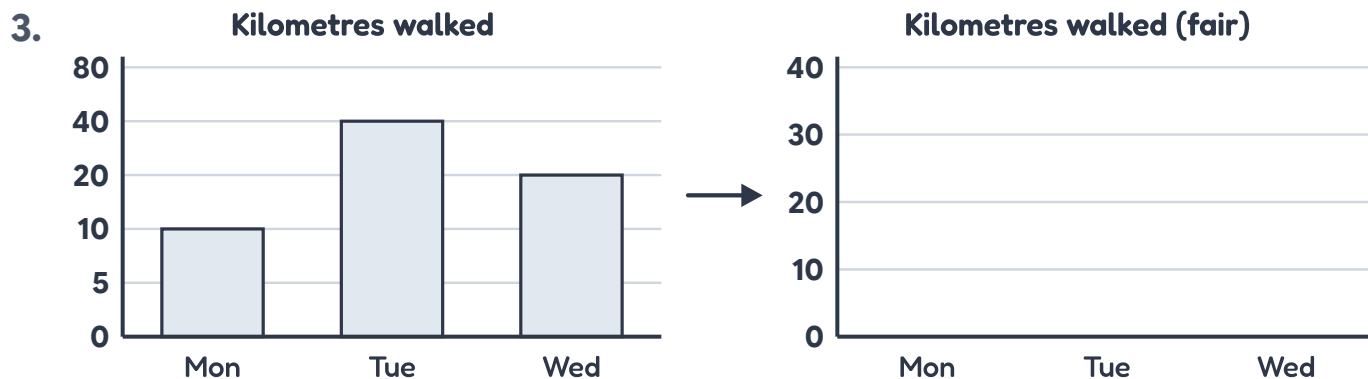
Read each graph, then draw it fairly on the graph that starts at 0.



On the fair graph, Sat looks 1.75 times as tall as Fri. Example



On the fair graph, 2024 looks _____ times as tall as 2023.



On the fair graph, Tue looks _____ times as tall as Mon.

Misleading Graphs

Is each headline true, false, or can't you tell from the data?

The Gumtree Gazette asked 200 students: "Which lunch do you like best?"

Lunch	Pasta	Sushi	Wraps	Salad
Students	64	50	46	40

1.

"Pasta was the most popular lunch"

Example

True

False

Can't tell
2.

"Half of the students chose sushi"

True

False

Can't tell
3.

"Wraps are chosen because they are cheap"

True

False

Can't tell
4.

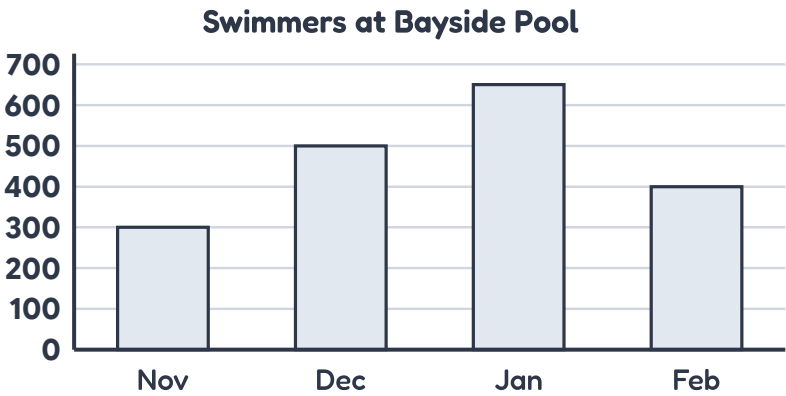
"Over a quarter of the students chose pasta"

True

False

Can't tell

The Bayside Bugle printed this graph of the swimmers at Bayside Pool.



5.

"Swimmer numbers went up every month"

True

False

Can't tell
6.

"January had over twice as many as November"

True

False

Can't tell
7.

"Hot weather brought the crowds in January"

True

False

Can't tell
8.

"Over 1,800 swimmers came in four months"

True

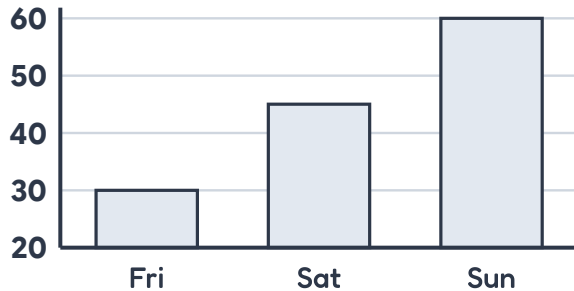
False

Can't tell

Misleading Graphs

Read each graph. How much bigger does it look? How much bigger is it?

1. Sausages sold at the sizzle



Read the real values.

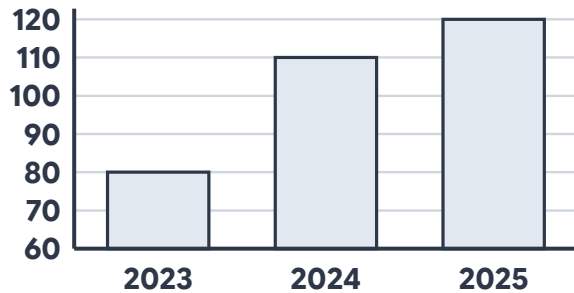
Example

Fri 30 Sat 45 Sun 60

Looks: Sun is 4 times Fri.

Really: Sun is 2 times Fri.

2. Entries in the fun run



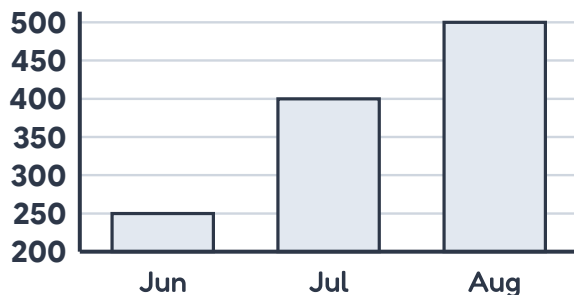
Read the real values.

2023 80 2024 110 2025 120

Looks: 2025 is 3 times 2023.

Really: 2025 is 1.5 times 2023.

3. Books borrowed from the library



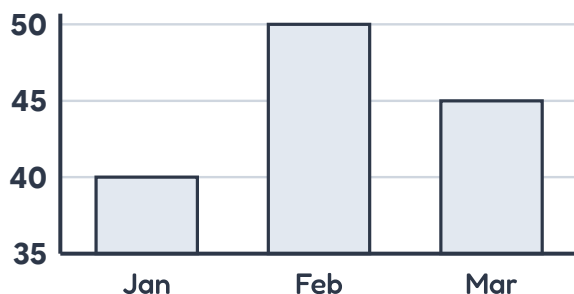
Read the real values.

Jun 250 Jul 400 Aug 500

Looks: Aug is 6 times Jun.

Really: Aug is 2 times Jun.

4. Rainfall in millimetres



Read the real values.

Jan 40 Feb 50 Mar 45

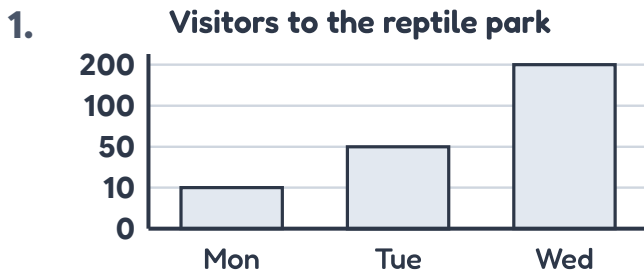
Looks: Feb is 3 times Jan.

Really: Feb is 1.25 times Jan.

Misleading Graphs

What is wrong with each graph? Compare it with the real values.

- A** The scale does not go up in equal steps.
B The value axis does not start at 0.
C A bigger picture is drawn for a bigger number.



What is wrong? **A** **B** **C** Example

Mon 10 Tue 50 Wed 200

Looks: Wed is 4 times Mon.

Really: Wed is 20 times Mon.

2. **Apples sold at the market**

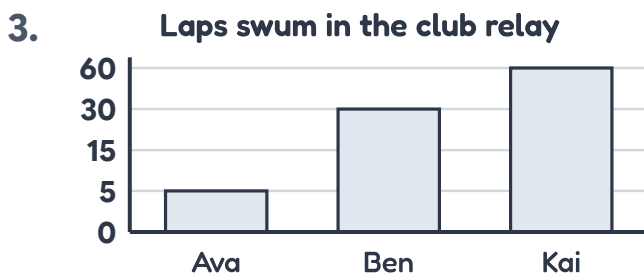


What is wrong? **A** **B** **C**

Height: June is 2 times May.

Space: June is 4 times May.

Really: June is 2 times May.



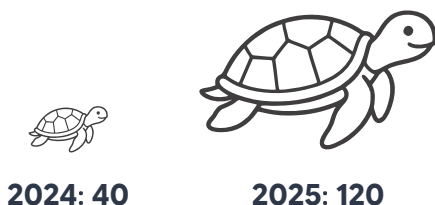
What is wrong? **A** **B** **C**

Ava 5 Ben 30 Kai 60

Looks: Kai is 4 times Ava.

Really: Kai is 12 times Ava.

4. **Turtles counted on the beach**



What is wrong? **A** **B** **C**

Height: 2025 is 3 times 2024.

Space: 2025 is 9 times 2024.

Really: 2025 is 3 times 2024.

Misleading Graphs

Is each claim fair? Circle Yes or No, then write the letter of the reason.

- A** Too few people were asked.
- B** Only one kind of person was asked.
- C** The question pushed people towards one answer.
- D** Nothing is wrong: the claim is fair.

1. 45 of the 50 people asked at the skate park said they love skateboarding.
Claim: "Most Australians love skateboarding."

Example

Fair? Yes **No**

Reason: B

2. Mia picked 4 students at random from the whole school. 3 said maths is their favourite subject.
Claim: "Most of the school likes maths best."

Fair? Yes **No**

Reason: A

3. A town asked 300 people of all ages, "Do you prefer the beach or the bush?" 180 said the beach.
Claim: "Most people in the town prefer the beach."

Fair? **Yes** No

Reason: D

4. 200 shoppers were asked, "Don't you agree the new car park is a waste of money?" 150 said yes.
Claim: "Most shoppers think the car park is a waste."

Fair? Yes **No**

Reason: C

5. 120 fans at a football match were asked, "What is your favourite sport?" 100 said football.
Claim: "Football is the town's favourite sport."

Fair? Yes **No**

Reason: B

6. Every class in five schools was asked, "How do you get to school?" 152 of the 400 students come by car.
Claim: "38% of these students come by car."

Fair? **Yes** No

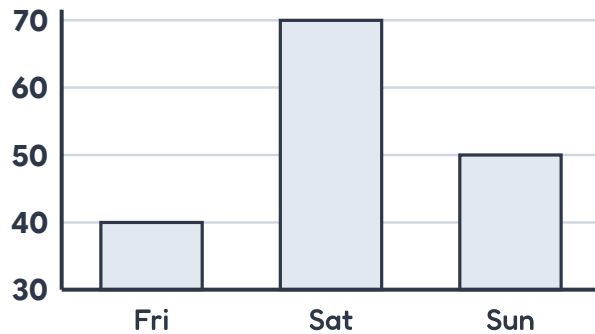
Reason: D

Misleading Graphs

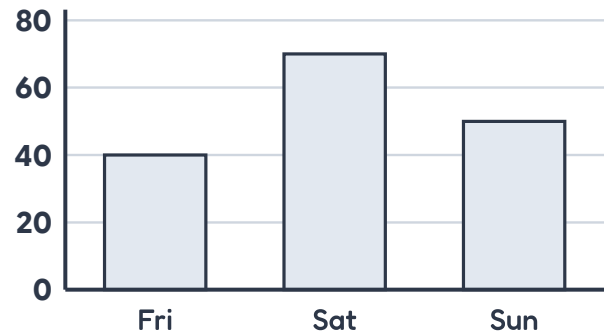
Read each graph, then draw it fairly on the graph that starts at 0.

1.

Ice blocks sold



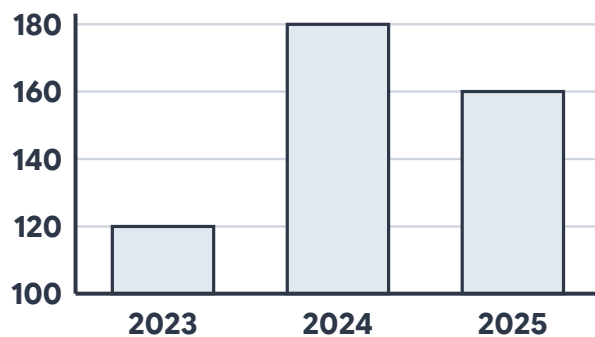
Ice blocks sold (fair)



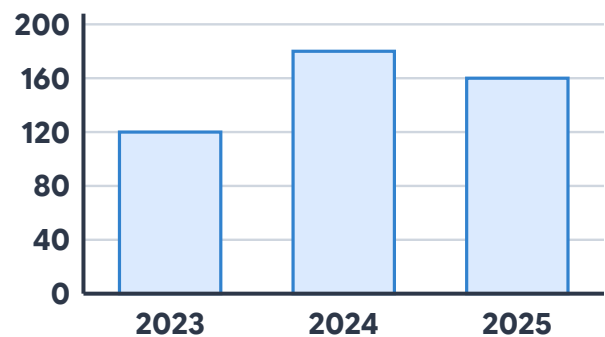
On the fair graph, Sat looks 1.75 times as tall as Fri. Example

2.

Trees planted by the school



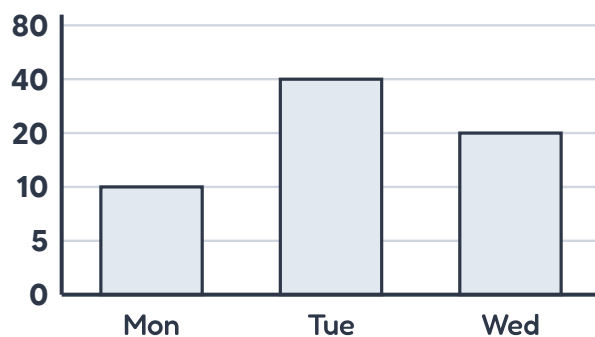
Trees planted by the school (fair)



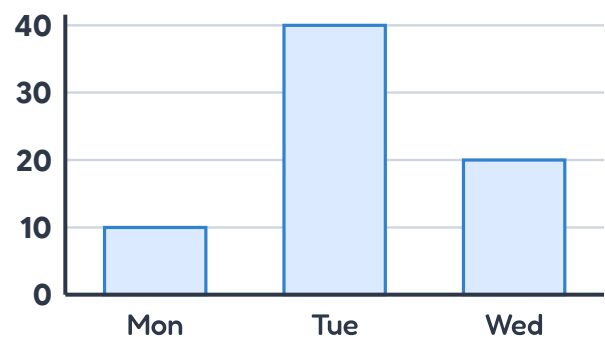
On the fair graph, 2024 looks 1.5 times as tall as 2023.

3.

Kilometres walked



Kilometres walked (fair)



On the fair graph, Tue looks 4 times as tall as Mon.

Misleading Graphs

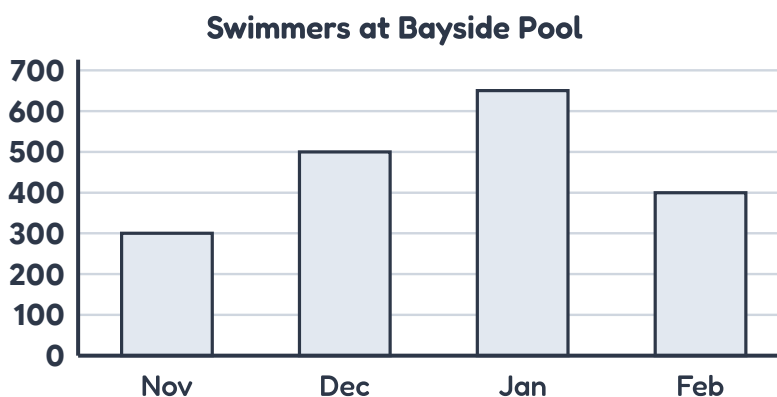
Is each headline true, false, or can't you tell from the data?

The Gumtree Gazette asked 200 students: "Which lunch do you like best?"

Lunch	Pasta	Sushi	Wraps	Salad
Students	64	50	46	40

- "Pasta was the most popular lunch" Example True False Can't tell
- "Half of the students chose sushi" True False Can't tell
- "Wraps are chosen because they are cheap" True False Can't tell
- "Over a quarter of the students chose pasta" True False Can't tell

The Bayside Bugle printed this graph of the swimmers at Bayside Pool.



- "Swimmer numbers went up every month" True False Can't tell
- "January had over twice as many as November" True False Can't tell
- "Hot weather brought the crowds in January" True False Can't tell
- "Over 1,800 swimmers came in four months" True False Can't tell