

Interpreting bar graphs & histograms



Read the scale carefully before you calculate.

Name _____

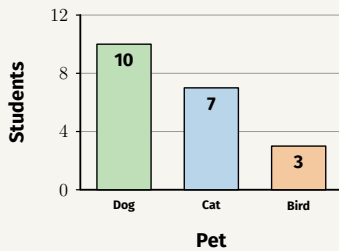
Date _____

Reading bar graphs and histograms

A bar graph has gaps between bars for separate categories; a histogram's bars touch because the horizontal axis is a continuous scale grouped into equal intervals. Read a bar's height straight off the vertical scale.

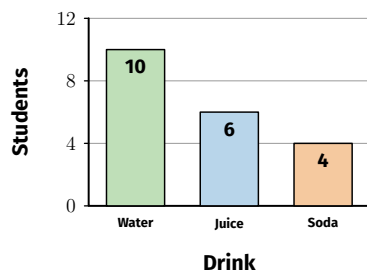
Worked example

This bar graph shows favourite pets. How many more students own a dog than a bird?



Dog = 10, Bird = 3.
 $10 - 3 = 7$ more students.

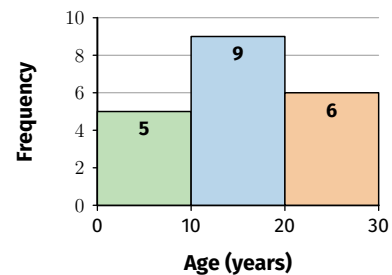
1. Which drink is the least popular?



Solution

Shortest bar is Soda
(4 students).

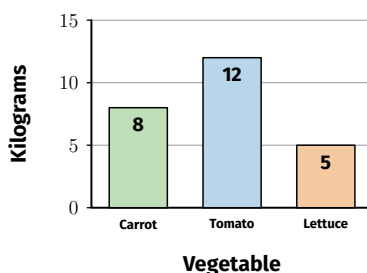
2. How many people are aged 10–20?



Solution

Read the 10–20 bar.
= 9 people

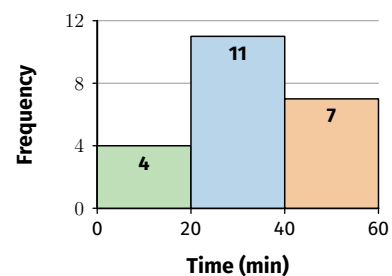
3. How many Tomatoes and Lettuces were grown altogether?



Solution

$12 + 5$
= 17 kg

4. How many students sat the exam in total?



Solution

$4 + 11 + 7$
= 22 students

Interpreting bar graphs & histograms (continued)

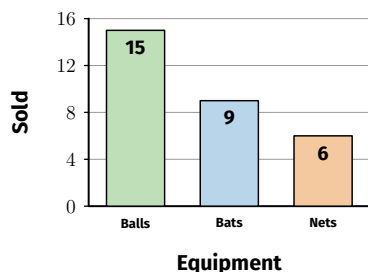


The tallest bar shows the mode or modal class.

Name _____

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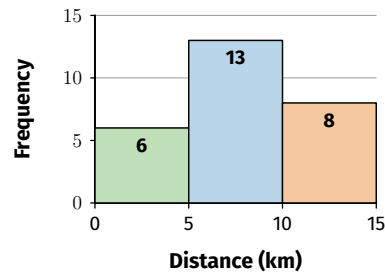
5. How many more balls were sold than nets?



Solution

$$15 - 6 \\ = 9 \text{ more}$$

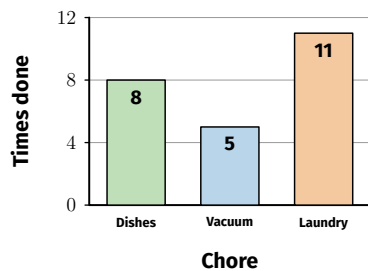
6. What is the modal class for commute distance?



Solution

Tallest bar is 5-10
(13 commuters).

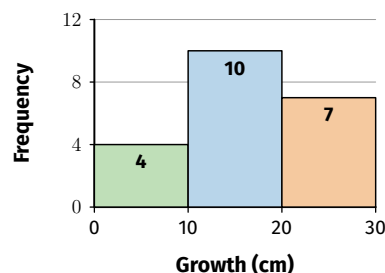
7. Which chore is the mode?



Solution

Tallest bar is Laundry
(11 times).

8. How many plants grew less than 20 cm?



Solution

$$4 + 10 \\ = 14 \text{ plants}$$

Interpreting bar graphs & histograms (continued)

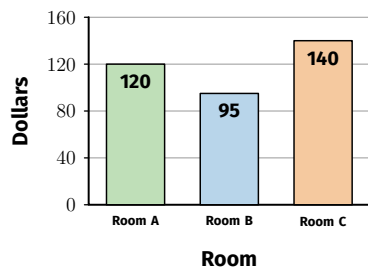


Combine reading the chart with a second calculation step.

Name _____

Date _____

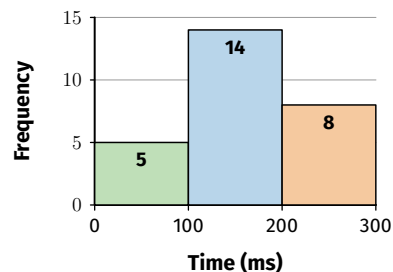
9. How much did Room A and Room C raise together?



Solution

$$120 + 140 = \$260$$

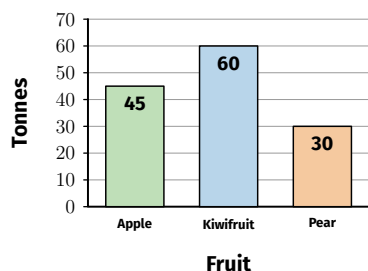
10. How many reacted in under 200 ms?



Solution

$$5 + 14 = 19 \text{ people}$$

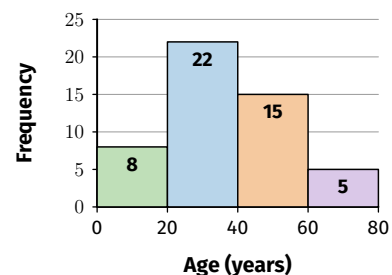
11. How many more tonnes of Kiwifruit than Pear were exported?



Solution

$$60 - 30 = 30 \text{ tonnes}$$

12. Which age interval has the highest frequency?



Solution

Tallest bar is 20-40 (22 people).

Interpreting bar graphs & histograms (continued)



A weighted average, cumulative frequency, and frequency density all need care.

Name _____

Date _____

13. Class A (20 students) averaged 58%. Class B (15 students) averaged 72%. Find the combined average.

Solution

$$\begin{aligned} & \frac{20(58) + 15(72)}{20 + 15} \\ &= \frac{1160 + 1080}{35} = \frac{2240}{35} \\ &= 64\% \end{aligned}$$

14. A cumulative frequency table:
Value $< 10 = 5$, $< 20 = 14$, $< 30 = 23$, $< 40 = 30$. How many values lie between 20 and 30?

Solution

$$\begin{aligned} & 23 - 14 \\ &= 9 \text{ values} \end{aligned}$$

15. A histogram has classes 0–10 (frequency 9) and 10–25 (frequency 12). Which class has the higher frequency density?

Solution

$$\begin{aligned} & 9 \div 10 = 0.9; 12 \div 15 = 0.8 \\ & 0-10 \text{ is higher.} \end{aligned}$$