Circle Graphs

Explore ideas and representations

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

A circle graph shows parts of a whole. Multiply a share written as a fraction by the total to find a count, or by 360° to find an angle. Check that shares sum to 100% and sector angles sum to 360°.

Worked example

A category contains 14 of 70 items. Find its percent and angle.

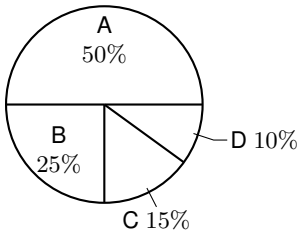
1. Divide the part by the whole: $14/70 = 1/5$.
2. Write that fraction as a percent: $1/5 = 20\%$.
3. Multiply by one full turn: $(1/5)(360) = 72^\circ$.

Answer: 20%; 72°.

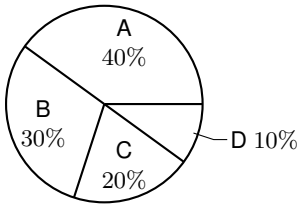
Practice Problems

Show your thinking.

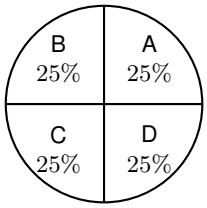
1. Read the percent for group A and find its count out of 200 observations.



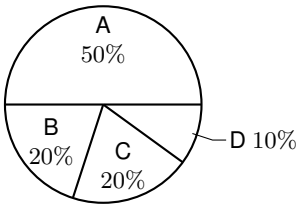
2. Find the central angle and count for group B. The whole graph represents 300 observations.



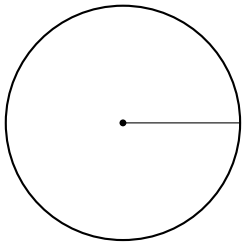
3. Find the combined percentage and count for groups A and B out of 80 observations.



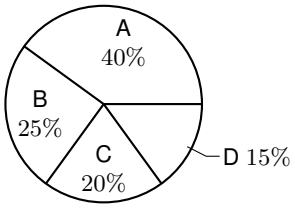
4. Give the fraction, percent, and count outside group A. There are 120 observations in all.



5. A, B, C, and D have shares 30%, 30%, 25%, and 15%. Calculate all four sector angles and draw a labeled circle graph.



6. The graph represents 200 observations. Give the counts for A and D, and state how many more observations the larger group has.



Answer Key

1. Group A: 50%, or 100 observations.
2. B: 108° and 90 observations.
3. A and B together: 50%, or 40 observations.
4. Outside A: $1/2$, 50%, and 60 observations.
5. A 108°, B 108°, C 90°, D 54°. See the completed graph below.
6. A: 80; D: 30. A has 50 more observations.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The sector label for A is 50%.
2. That is $50/100 = 1/2$ of the circle and of the total.
3. The count is $(1/2)(200) = 100$ observations.

Problem 2

1. B has share $30/100 = 3/10$.
2. The angle is $(3/10)(360) = 108^\circ$.
3. The count is $(3/10)(300) = 90$.

Problem 3

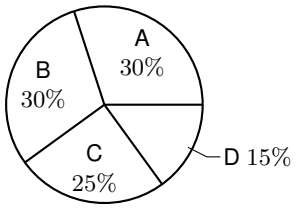
1. A and B have equal shares of 25%.
2. Combine the percentages: $25\% + 25\% = 50\%$.
3. That is one half of the total, so $(1/2)(80) = 40$ observations are in A or B.

Problem 4

1. Subtract the A share from the whole: $100\% - 50\% = 50\%$.
2. The remaining share as a fraction is $50/100 = 1/2$.
3. The remaining count is $(1/2)(120) = 60$.

Problem 5

1. Multiply each share of the whole by 360°: A 108°, B 108°, C 90°, D 54°.
2. Check the full circle: $108 + 108 + 90 + 54 = 360^\circ$.
3. Start at the printed ray and measure counterclockwise. Draw radii at $108, 216, 306$ degrees from the start. Label each sector with its category and percent.



Problem 6

1. A has 40% of the total, or $(40/100)(200) = 80$ observations.
2. D has 15% of the total, or $(15/100)(200) = 30$ observations.
3. The count difference is $80 - 30 = 50$, with A larger.

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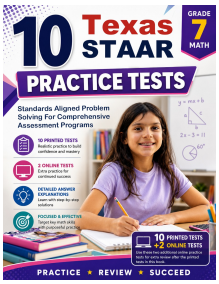

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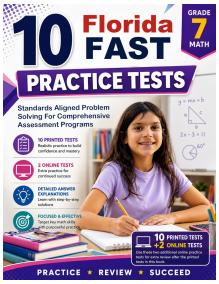

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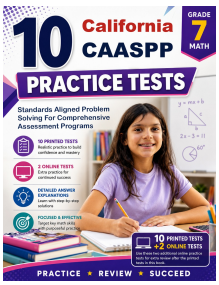

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