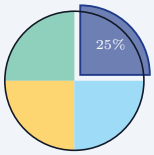
Pie Graphs

Name: _____	Date: _____	Score: _____ / 18

Quick Review and Helpful Hints

A pie (circle) graph shows parts of a whole. The whole circle is 100%, which equals $360°$. To find the amount for a slice, multiply its percent (as a decimal) by the total. To find a slice's central *angle*, multiply its percent by $360°$. All the slices add up to 100%.

▷ **Example:** In a survey of 200 people, 25% chose pizza. How many people chose pizza? **Work:** Change 25% to 0.25 and multiply by the total: 0.25×200. ★ **Answer:** 50 people

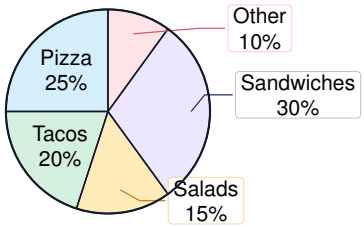


Whole circle $= 100\% = 360°$.

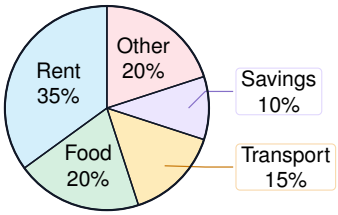
Practice Problems

Use each circle graph. Find amounts, percents, ratios, and central angles.

Lunch choices: 240 students



Monthly budget: $1,800



1. How many total students were surveyed? _____
2. How many students chose pizza? _____
3. How many students chose tacos? _____
4. How many students chose salads? _____
5. How many students chose sandwiches? _____
6. How many students chose other lunches? _____
7. How many students chose pizza or tacos? _____
8. What fraction of the students chose salads? _____
9. What central angle represents pizza? _____
10. What central angle represents sandwiches? _____
11. What percent chose something other than Other? _____
12. What is the ratio of tacos to pizza? _____
13. How many dollars are budgeted for rent? _____
14. How many dollars are budgeted for food? _____
15. How many dollars are budgeted for transportation? _____
16. How many dollars are budgeted for savings? _____
17. How many dollars are budgeted for food and other combined? _____
18. What central angle represents savings? _____

Answer Keys

1. 240	**7.** 108	**13.** \$630
2. 60	**8.** $\frac{3}{20}$	**14.** \$360
3. 48	**9.** 90°	**15.** \$270
4. 36	**10.** 108°	**16.** \$180
5. 72	**11.** 90%	**17.** \$720
6. 24	**12.** $4:5$	**18.** 36°

Step-by-Step Explanations

1. For the first chart, the total is given right in the title: "Lunch choices: 240 students." The whole circle represents all 240 students, so no calculation is needed for this one.

2. Pizza is 25% of the lunch chart. Change 25% to 0.25 and multiply by the total number of students: $0.25 \times 240 = 60$, so 60 students chose pizza.

3. Tacos are 20% of the 240 students. Since $20\% = 0.20$, multiply $0.20 \times 240 = 48$, so 48 students chose tacos.

4. Salads are 15% of the group. Use the same percent-of-a-total idea: $0.15 \times 240 = 36$, so 36 students chose salads.

5. Sandwiches are the largest slice at 30%. Multiply 0.30 by the total, $0.30 \times 240 = 72$, so 72 students chose sandwiches.

6. The Other slice is 10% of the students. Because 10% means one tenth, $0.10 \times 240 = 24$, so 24 students chose other lunches.

7. For pizza or tacos, add the two categories because either choice is allowed: pizza is 60 students and tacos is 48 students, so $60+48 = 108$ students.

8. The salad slice is 15% of the circle. Write 15% as $\frac{15}{100}$ and simplify by dividing by 5: $\frac{15}{100} = \frac{3}{20}$.

9. A whole circle has 360°, and pizza is 25% of the circle. Multiply $0.25 \times 360^\circ = 90^\circ$, so the pizza sector is a right angle.

10. Sandwiches are 30% of the circle. To find the central angle, multiply the percent as a decimal by 360°: $0.30 \times 360^\circ = 108^\circ$.

11. The only students not counted are in the Other slice, which is 10%. Since the full chart is 100%, the percent that chose something other than Other is $100\% - 10\% = 90\%$.

12. Use the percents for the ratio because both categories come from the same total. Tacos to pizza is $20:25$, and dividing both numbers by 5 gives $4:5$.

13. In the budget chart, rent is 35% of the monthly total of \$1,800. Multiply $0.35 \times 1800 = 630$, so \$630 is budgeted for rent.

14. Food is 20% of the \$1,800 budget. Calculate $0.20 \times 1800 = 360$, so \$360 is budgeted for food.

15. Transportation is 15% of the monthly budget. Multiply $0.15 \times 1800 = 270$, so the transportation amount is \$270.

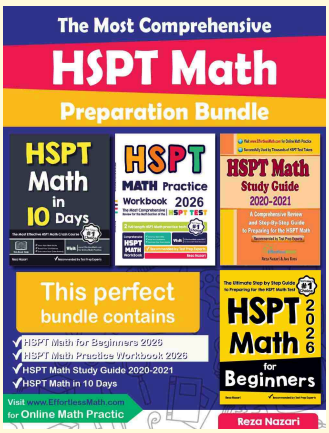
16. Savings is 10% of the budget, which is one tenth of the total. One tenth of \$1,800 is $0.10 \times 1800 = 180$, so \$180 is saved.

17. Food and Other are each 20%, so together they are 40% of the budget. Multiply $0.40 \times 1800 = 720$, so the combined amount is \$720.

18. The savings slice is 10% of the circle. A full circle is 360°, so $0.10 \times 360^\circ = 36^\circ$ for the savings central angle.

Keep Building HSPT Math Skills

Recommended Effortless Math resources



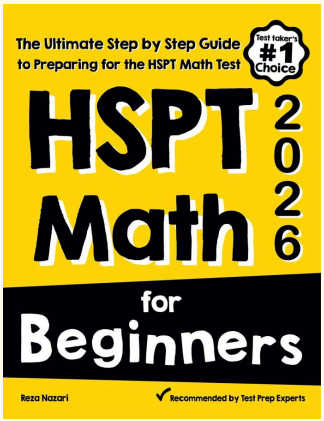
The Most Comprehensive HSPT Math Preparation Bundle

Use the complete HSPT Math resource for review, worked examples, extra practice, and test-style questions after each worksheet.

Scan Me

Download Instantly

STUDENT FAVORITE - HSPT Math for Beginners



HSPT Math for Beginners 2026

Step-by-step lessons, topic practice, and full review support for students who want a calm path through HSPT Math preparation.

A strong companion for self-study, tutoring, homework, and targeted review.

PDF Edition

Scan Me

Download Instantly

For more HSPT Math prep, visit EffortlessMath.com/HSPT