

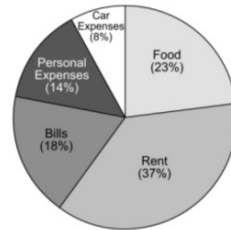
## Worksheet

## SOLUTIONS

## Interpreting Circle Graphs

1. The circle graph shows Samson's household budget for a month.

Samson's Household Budget  
for One Month



- a) Samson takes home \$2500 per month. How much does he budget for each item?

1) a

car

8% of \$2500

$$0.08 \times 2500 = \$200$$

Personal

14% of \$2500

$$0.14 \times \$2500 = \$350$$

Bills

18% of \$2500

$$0.18 \times \$2500 = \$450$$

Rent

37% of \$2500

$$0.37 \times \$2500 = \$925$$

Food

23% of \$2500

$$0.23 \times \$2500 = \$575$$

- b) Samson gets a raise of \$500 per month. How will this affect his food budget?

$$\$2500 + \$500 = \$3000$$

b)

Food

23% of \$3000

$$10\% \text{ of } \$3000 = \$300$$

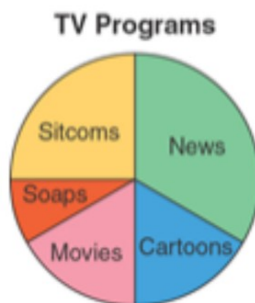
$$20\% \text{ of } \$3000 = \$600$$

$$1\% \text{ of } \$3000 = \$30$$

$$3\% \text{ of } \$3000 = \$90$$

$$23\% \text{ of } \$3000 = \$690$$

2. This circle graph shows how much time is spent in one day watching different types of TV programs.



- a) Which type of program is watched for the greatest amount of time? **news**
- b) Which two types of programs are watched for approximately the same amount of time? **movies & cartoons**
- c) Estimate the fraction of time spent watching sitcoms. **sitcoms: 25%**
- d) Suppose TV is watched for 1000 days.  
Estimate how much time is spent watching sitcoms.

$$25\% \text{ of } 1000 = 250 \text{ days}$$

same as dividing by 4

- 3) The human body is made up of 20% fat, 18% bone, 50% muscle, and 12% other.
- a) Anica's mass is 69 kg. Determine the mass of each part of Anica's body.  
 i) fat      ii) bone      iii) muscle      iv) other
- b) Display the data on a circle graph.
- c) What is easily seen on the graph that is not obvious from the data? Explain.

**Fat**

20% of 69

$$0.20 \times 69 = 13.8\text{kg}$$

**Sector Angle**  
 $0.2 \times 360 = 72^\circ$

**bone**

18% of 69

$$0.18 \times 69 = 12.42\text{kg}$$

**Sector Angle**  
 $0.18 \times 360 = 64.8^\circ$

**Muscle**

50% of 69

$$0.50 \times 69 = 34.5\text{kg}$$

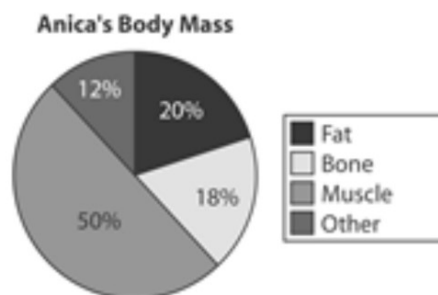
**Sector Angle**  
 $0.5 \times 360 = 180^\circ$

**other**

12% of 69

$$0.12 \times 69 = 8.28\text{ kg}$$

**Sector Angle**  
 $0.12 \times 360 = 43.2^\circ$



- c) Half of Anica's body mass is muscle. The majority of body mass is made up of muscle. The visual representation makes this very obvious.

- 4) To help reduce the cost of the Grade 7 camp weekend, the following amount of money was donated by each group: parents \$525, teachers \$230, local businesses \$340. Students also held a cake auction, which raised \$720.

- How much money was collected?
- What fraction of the donations was given by local businesses?
- What percent of the money was raised at the cake auction?
- Display the data on a circle graph.

$$a) 525 + 230 + 340 + 720 = 1815$$

Parents

$$\frac{525}{1815} = \frac{35}{121} = 0.289 = 28.9\%$$

$$0.289 \times 360 = 104.04^\circ$$

Teachers

$$\frac{230}{1815} = \frac{46}{363} = 0.127 = 12.7\%$$

$$0.127 \times 360 = 45.72^\circ$$

Business

$$\frac{340}{1815} = \frac{68}{363} = 0.187 = 18.7\%$$

$$0.187 \times 360 = 67.32^\circ$$

Students

$$\frac{720}{1815} = \frac{48}{121} = 0.397 = 39.7\%$$

$$0.397 \times 360 = 142.92^\circ$$

d) **Money Raised for  
Graduation Camp Weekend**

