

TOPIC: ESTIMATION AND GRAPHS

Rounding Review

- ◆ Rounding Rule: Remember to round *up* when the next digit is ____ or higher.

New

Place Value and Rounding

Millions	,	Hundred Thousands	Ten Thousands	Thousands	,	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten Thousandths
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(A) Round 2980.71 to the nearest **TENTH**.

(B) Round 2980.71 to the nearest **WHOLE NUMBER**.

(C) Round 2980.71 to the nearest **HUNDRED**.

- ◆ Rounding Rule: When rounding up a 9, it becomes a 0 and you increase the digit *before* it by 1.

PRACTICE

Round to the specified place value to estimate the calculation. Then compare to the actual result.

(A) Nearest tenth: $48.76 + 19.84 - 7.29$

(B) Nearest whole number: $19.5 \cdot 46.71$

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Estimation and Problem Solving

◆ **Estimation** can be used to _____ problems and _____ your work or verify potential solutions.

► **Over**estimates are _____ than the actual value. **Under**estimates are _____ than the actual value.

EXAMPLE

Matt is planning a day at the museum. The bus fare is \$7.96, the museum admission is \$27.61, and the price of lunch is \$19.77.

(A) Estimate the amount of money Matt should budget for his day at the museum.



(B) Is your answer to part (A) an overestimate or underestimate? How do you know?

(C) Matt's receipts show he was charged \$61.24 for the day. He believes he was overcharged at some point. Do you believe he was? Why or why not?

PRACTICE

Determine if the following is an estimate or an exact value.

(A) The distance from the school to the museum is almost 3 miles.

[ESTIMATE | EXACT VALUE]

(B) A standard basketball hoop is 10 feet tall.

[ESTIMATE | EXACT VALUE]

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EXAMPLE

A storage facility is installing units that are 5 feet 6 inches wide. If they plan on putting these units on the two sides of a 315-foot hallway, estimate the number of lockers they can install along this hallway. If the facility wants to install at least 98 units along this hallway, will they meet their goal? Why or why not?

Recall

12 inches = 1 foot

PRACTICE

A 12-player soccer team buys ice cream. At least one player ordered the most expensive item – a \$12.45 sundae—and at least one player got the cheapest item – a \$2.25 kiddie cone. Eight players ordered two-scoop cones at \$7.75 each. Which of the following is the best estimate of the total cost for all 12 orders?

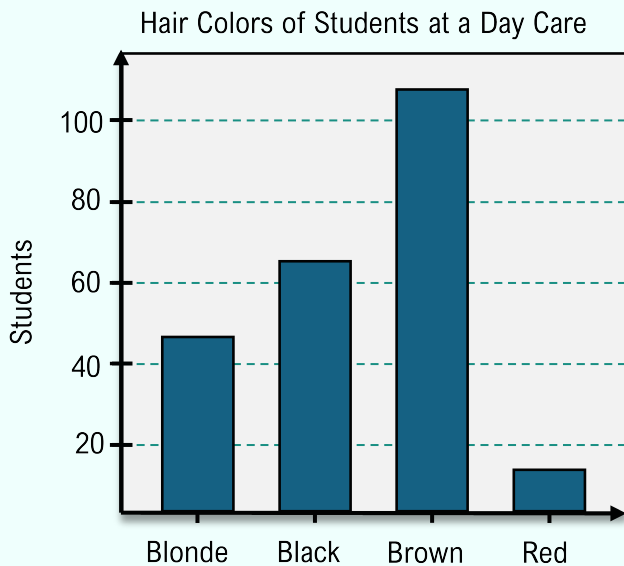
- A. \$70
- B. \$90
- C. \$110
- D. \$120

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Estimation with Data and Graphs

- ◆ When given a graph, **estimate** the value of data points if you can't find exact values or to make calculations easier.
 - For bar graphs, estimate the _____ of the bars using the scale to approximate category totals.

EXAMPLE



(A) Estimate the number of students with each hair color.

Blonde: _____

Black: _____

Brown: _____

Red: _____

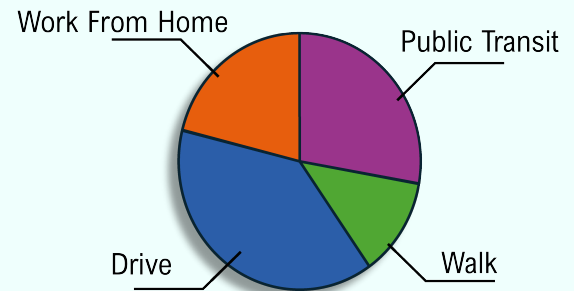
(B) Is your answer to part (A) an overestimate or underestimate? How do you know?

EXAMPLE

A large company employs 785 workers in various roles. They send a survey to all employees to record their transportation habits. The data they collected is shown in the pie chart below.

(A) If 20% of employees work from home, estimate how many employees that is.

(B) Estimate the difference between the number of workers who take public transit and the number that walk.



(C) If the company has 270 total parking spaces, should they consider adding more?

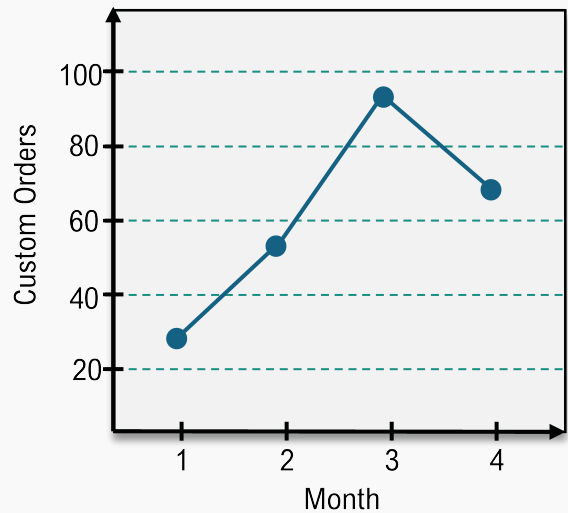
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PRACTICE

A souvenir shop tracks the number of custom orders they receive during the first four months of their busy season. Use estimation to answer the questions below.

(A) Estimate the number of custom orders in the third month.

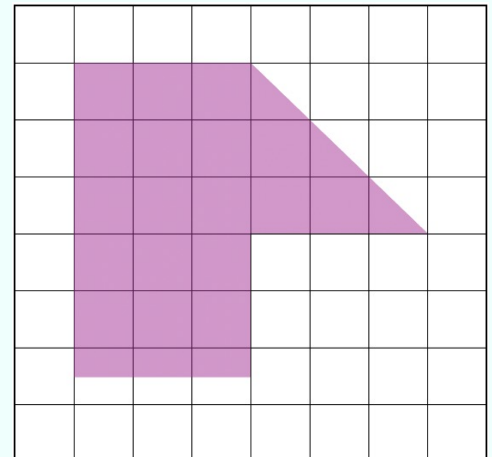
(B) Estimate the sum of custom orders for the first four months of tourist season.



(C) The store plans on running a special promotion for their custom items if they sell more than 240 custom items in the first four months. Should they run the promotion?

EXAMPLE

Estimate the total area of the figure.



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EXAMPLE

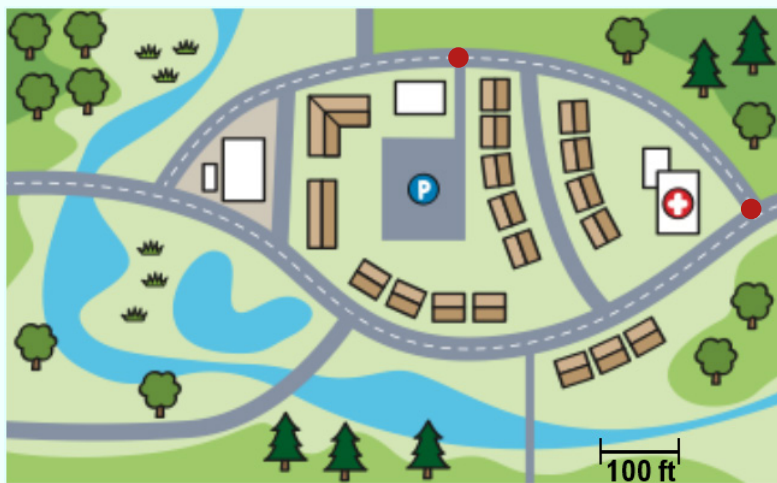
Estimate the number of blueberries in the image.



Blueeyes Shutterstock. (2017). Freshly Picked Blueberries

EXAMPLE

Below is a map of a campground. Estimate the distance, in feet, along the road from the entrance of the parking lot to the entrance of the medical center, marked with red dots on the map.



PDQ Digital Media Solutions. Map. [Illustration]. Pearson Asset Library.

References:

Blueeyes Shutterstock. (2017). Freshly Picked Blueberries. [Photograph]. Pearson Asset Library.

PDQ Digital Media Solutions. Map. [Illustration]. Pearson Asset Library.