

3-4 Estimating Sums and Differences - Practice and Problem Solving

Estimate using rounding.

11. $33.15 + 86.85$

Round each number to the nearest ten. Then add.

$$\begin{aligned} 33.15 + 86.85 &\approx 30 + 90 \\ &= 120 \end{aligned}$$

13. $62.61 - 13.05$

Round each number to the nearest ten. Then subtract.

$$\begin{aligned} 62.61 - 13.05 &\approx 60 - 10 \\ &= 50 \end{aligned}$$

15. $9.05 + 1.42 + 6.79$

Round each number to the nearest unit. Then add.

$$\begin{aligned} 9.05 + 1.42 + 6.79 &\approx 9 + 1 + 7 \\ &= 17 \end{aligned}$$

17. **MAGAZINES** Jackson and Lana each sold magazines. Jackson collected \$432.17 and Lana collected \$378.64. About how much more did Jackson collect than Lana?

Use front-end estimation.

$$\begin{array}{r} \$432.17 \quad \$430 \\ -\$378.64 \rightarrow -\$380 \\ \hline 53 \quad 50 \end{array}$$

Using front-end estimation, rounding each number to the nearest ten. \$50

Estimate using clustering.

19. $\$3.33 + \$3.45 + \$2.78 + \2.99

Use clustering.

$$\begin{aligned} \$3.33 + \$3.45 + \$2.78 + \$2.99 &\approx 4 \times \$3 \\ &= \$12 \end{aligned}$$

21. $\$55.49 + \$54.99 + \$55.33$

Use clustering.

$$\begin{aligned} \$55.49 + \$54.99 + \$55.33 &\approx 3 \times \$55 \\ &= \$165 \end{aligned}$$

Estimate using front-end estimation.

Name: School: Grade: Class:

23. $99.8 + 100.2 + 99.5 + 100.4$

Use clustering.

$$\begin{aligned} 99.8 + 100.2 + 99.5 + 100.4 &\approx 4 \times 100 \\ &= 400 \end{aligned}$$

Estimate using front-end estimation.

25. $27.9 - 12.5$

Use front-end estimation.

$$\begin{aligned} 27.9 - 12.5 &\approx 20 - 10 \\ &= 10 \end{aligned}$$

27. $124.8 + 264.9$

Use front-end estimation.

$$\begin{aligned} 124.8 + 264.9 &\approx 100 + 200 \\ &= 300 \end{aligned}$$

29. $\$50.96 + \19.28

Use front-end estimation.

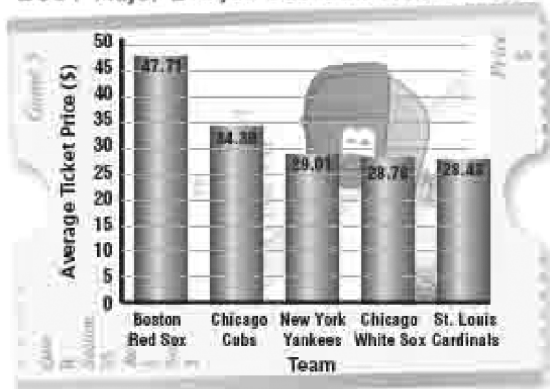
$$\begin{aligned} \$50.96 + \$19.28 &\approx \$50 + \$10 \\ &= \$60 \end{aligned}$$

31. **TUNNELS** The Flathead rail tunnel in Montana is 7.78 miles long. Colorado's Moffat rail tunnel is 6.21 miles long. About how much longer is the Flathead rail tunnel than the Moffat rail tunnel using rounding? If you use front-end estimation, would the estimate be the same? Why or why not?

If we use rounding, the Flathead rail tunnel is about $8 - 6$ or 2 miles longer than the Moffat rail tunnel. If we use front-end estimation, the Flathead rail tunnel is $7 - 6$ or 1 mile longer than the Moffat rail tunnel. Therefore, the estimates are not be the same. When using rounding, the numbers were rounded to the nearest whole number. With front-end estimation, however, the values of the digits in the front place were used.

ANALYZE GRAPHS Use the graph.

2007 Major League Baseball Ticket Prices



Source: Team Marketing Report

Name: School: Grade: Class:

33. If the average price for a soda and hot dog at a New York Yankees game is \$6.25, about how much would a family pay for four tickets, four sodas and four hot dogs?

Use clustering.

$$\begin{aligned}4 \times \$29.01 + 4 \times \$6.25 &\approx 4 \times \$30 + 4 \times \$6 \\&= \$120 + \$24 \\&= \$144\end{aligned}$$

Using rounding, a family of four would pay about \$144.

35. **CHALLENGE** Donovan bought six identical hats for his friends. Based on rounding, the total estimate was \$90. Decide what the maximum and minimum price of each hat could be.

$$\$90 \div 6 \text{ items} = \$15$$

The maximum amount that rounds to \$15 is \$15.49.

The minimum amount that rounds to \$15 is \$14.50.

37. A school lunch menu is shown.

Monday			
Pizza	\$1.10	Soda	\$0.85
Salad	\$2.65	Milk	\$0.75
Taco	\$1.30	Fruit	\$1.15

Estimate how much money you will need to buy a slice of pizza, a taco, and a soda.

- A a little less than \$2
B a little more than \$2
C a little more than \$3
D a little less than \$3

Use clustering.

$$\begin{aligned}\$1.10 + \$1.30 + \$0.85 &\approx 3 \times \$1 \\&= \$3\end{aligned}$$

So, you need about \$3. To determine if you need a little more or a little less than \$3, examine how close the values are to \$1.00. There are two values greater than \$1 (by a total of \$0.40) and one less than \$1 (by \$0.15). So, you will need more than \$3.

39. **GEMSTONES** The Hope Diamond has a weight of 45.52 carats. Round this amount to the nearest tenth.

45.52 carats rounds to 45.5 carats.

PREREQUISITE SKILL Add or subtract.

41.
$$\begin{array}{r}278 \\+199 \\ \hline\end{array}$$

Add.

$$\begin{array}{r}278 \\+199 \\ \hline477\end{array}$$

Name: School: Grade: Class:

43. 700
 -235

Subtract.
 700
 -235
 465