

Additional Practice 4-2

Estimate the Product of a Decimal and a Whole Number

Another Look!

Zane needs to buy 27 party favors for the family reunion. The favors cost \$2.98 each. About how much will the party favors cost in all?

Here are two ways you can estimate.

Round both numbers.

$$\begin{array}{r} \$2.98 \times 27 \\ \downarrow \quad \downarrow \\ \$3 \times 30 = \$90 \end{array}$$

The favors will cost about \$90.

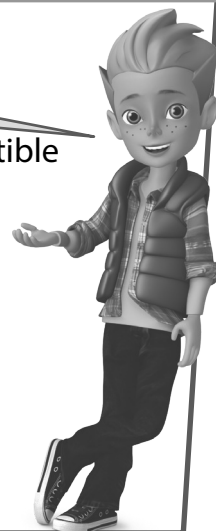
Since 27 is between 25 and 30, the total cost will be between \$75 and \$90.

Is an overestimate or an underestimate better when estimating how much something will cost?

Replace the factors with compatible numbers and multiply mentally.

$$\begin{array}{r} \$2.98 \times 27 \\ \downarrow \quad \downarrow \\ \$3 \times 25 = \$75 \end{array}$$

The favors will cost about \$75.



1. Round to the greatest place to estimate 23×1.75 .

$$\begin{array}{r} 23 \times 1.75 \\ \downarrow \quad \downarrow \\ 20 \times 2 \end{array}$$

So, 23×1.75 is about 40

2. Use compatible numbers to estimate 12×0.49 .

$$\begin{array}{r} 12 \times 0.49 \\ \downarrow \quad \downarrow \\ 10 \times 0.5 \end{array}$$

So, 12×0.49 is about 5

Sample answer given.

In 3–14, estimate each product.

Sample answers are given.

3. 19.3×6

120

4. 345×5.79

1,800

5. 9.66×0.46

5

6. 8.02×70

560

7. 1.56×48

100

8. 45.1×5

250

9. 0.13×11

1

10. 99.7×92

9,000

11. 147×10.4

1,500

12. 23.7×4.76

125

13. 3×0.85

3

14. 0.35×9

3.6

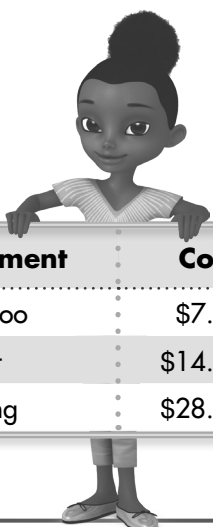


15. Can Mrs. Davis and her two sisters get their hair colored for less than \$100 if they include a \$10 tip? Explain.

Yes; $\$30 \times 3 = \90 is an overestimate. $\$90 + \$10 = \$100$

16. If Mrs. Davis and her sisters also get haircuts, about how much will they pay in all?

Sample answer: about \$145



Treatment	Cost
Shampoo	\$7.95
Haircut	\$14.95
Coloring	\$28.95

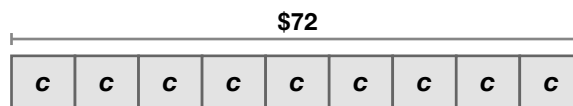
17. **Reasoning** Mrs. Smith bought her three children new raincoats. Each raincoat cost \$25.99. About how much did Mrs. Smith spend on the 3 raincoats? Is your estimate an overestimate or underestimate? Write an equation to show your work.

Sample answer: \$75; $3 \times 25 = 75$. This is an underestimate since $25 < 25.99$.

18. **Higher Order Thinking** Some Native American tribes made jewelry with Dentalia shells. Each Dentalia shell is about 1.5 inches long. About how much longer would a necklace made with 24 shells be than a necklace made with 18 shells? Use compatible numbers.

Sample answer: 7.5 inches longer; $25 \times 1.5 = 37.5$, $20 \times 1.5 = 30$, and $37.5 - 30 = 7.5$.

19. **Algebra** A youth hockey league is selling boxes of popcorn to raise money for new uniforms. Sidney sold 9 boxes for a total of \$72 in sales. Use the bar diagram and write an equation to find the value of c , the cost of each box Sidney sold.



$9 \times c = 72$; $c = 8$; The cost of each box is \$8.

Assessment Practice

20. Rounding to the nearest tenth, which of the following give an **overestimate**?

- ☐ 37.63×0.54
☒ 54.49×0.45
☒ 1.19×1.45
☐ 0.81×8.01
☐ 27.83×13.64

21. Rounding to the nearest whole number, which of the following give an **underestimate**?

- ☐ 2.7×13.5
☐ 4.51×8.7
☒ 9.19×8.48
☒ 7.49×11.4
☐ 3.6×6.5