Section 1.2 Unit Price, Build Your Skills, p39–40
Student Resource p26–27

**Build Your Skills**

1.
$$\frac{\$1053.00}{12} = \$87.75$$
The unit price of each sink is $87.75.

2. Package A:
$$\frac{\$19.99}{7} = \$2.86/\text{kg}$$
Package B:
$$\frac{\$35.95}{14} = \$2.57/\text{kg}$$
Package C:
$$\frac{\$50.99}{21} = \$2.43/\text{kg}$$
Package C has the lowest unit cost.

3.
$$\frac{\$120.00}{4} = \$30.00/\text{lock}$$
$$\frac{\$192.00}{6} = \$32.00/\text{lock}$$
The first supplier has the lower cost per lock. When selecting a lock, you should also consider the quality of the locks, since you want them to be secure.

4. a)
$$\frac{\$15.49}{2} = \$7.75/\text{shirt}$$
$$\frac{\$22.99}{3} = \$7.66/\text{shirt}$$
b) 2 packages of 3 plus 1 package of 1?
2($22.99) + $9.98 = $55.96
Or 1 package of 3 plus two packages of 2?
$22.99 + 2($15.49) = $53.97
The best combination is to buy one package of 3 shirts and two packages of 2.

5. a) First, convert everything to kilograms so all the denominator units are the same.
500 g = 0.5 kg
Now, calculate unit price.
$$\frac{\$7.50}{0.5\text{ kg}} = \$15.00/\text{kg}$$
$\$12.50/\text{kg}$
$$\frac{\$19.50}{1.5\text{ kg}} = \$13.00/\text{kg}$$

So, the second price is the best buy.
b) Which combination will be the best price for 2.5 kg?
Two of the second price plus one of the first?
2($12.50) + $7.50 = $32.50
Or 1 of the second price plus one of the third?
$12.50 + $19.50 = $32.00
(You can factor out buying mostly from the first option because it is the most expensive.)
The best price for 2.5 kg of meat can be obtained by buying 1 kg at the second price and 1.5 kg at the third.

6. Convert the denominators to kg.
250 g = 0.25 kg
500 g = 0.5 kg
Then calculate unit price.

$$\frac{\$4.25}{0.25\text{ kg}} = \$17.00/\text{kg}$$

$$\frac{\$7.95}{0.5\text{ kg}} = \$15.90/\text{kg}$$

$$\frac{\$29.50}{2} = \$14.75/\text{kg}$$

The last package of meat has the lowest unit price. Nonetheless, the other store has two unit prices that are lower than this, so it would be better to buy your meat at the other store.

**Extend Your Thinking**

7. There are a couple of ways to solve this problem. Here is one option. First, you need to figure out which kit has the lowest unit price so you can see which kit is the best value. First, calculate the price per worker each kit can cover.
Kit 1:

$$\frac{\$42.50}{9} = \$4.72$$

Kit 2:

$$\frac{\$58.25}{40} = \$1.46$$

Kit 3:

$$\frac{\$70.50}{75} = \$0.94$$

Kit 3 has the best unit value. How many does Jason need?
First, divide the kits needed by the number of workers to see how many kits are needed.

$$\frac{250\text{ workers}}{75} = 3.34$$

Then calculate how much these 3 kits would cost.
3 × $70.50 = $211.50
How many workers still need kits if Jason buys 3 of kit 3?
First, calculate the maximum number of workers these 3 kits will cover.
3 × 75 = 225
Then, calculate how many workers still need to be covered by subtracting 225 workers (already covered by 3 of kit 3) from the total number of workers.

$250 - 225 = 25$
Kit 1:
$\frac{25}{9} = 2.78$
Calculate the total cost of these 3 kits.
$3 \times \$42.50 = \$127.50$
Kit 2:
One kit 2 will cover all 25 workers at a total cost of $58.25, which is a better buy than three of kit 1.
Now, calculate the total cost.
$211.50 (3 of kit 3) + $58.25 (1 of kit 2) = $269.75
The least expensive combination is 3 large kits and 1 medium kit at a price of $269.75, before taxes.