

# Working and Buying

## Example 1

*Problem:* you need to read some books for school, so you go to a book store to buy some; how much will 5 books at \$19.95 each cost?

*Solution:* you need to see \$19.95 five times is:  $\$19.95 \times 5 = \$99.75$ .

Five books at \$19.95 each will cost \$99.75.

## Example 2

*Problem:* you are buying some electronics for some new hires at your company; how much will 8 iPhones at \$200 each and 10 iPads at \$929 each cost?

*Solution:* you need to add \$200 eight times to \$929 ten times:  
 $\$200 \times 8 + \$929 \times 10 = \$1600 + \$9290 = \$10,890$

So the iPhones and iPads will cost \$10,890.

## Example 3

*Problem:* you and some business associates are buying new office furniture; how much will 3 mahogany desks for \$2660 each and 3 chairs for \$545 each cost?

*Solution:* you need to find how much the desks cost and how much the chairs cost, then add those amounts together:

$$\$2660 \times 3 + \$545 \times 3 = \$7980 + \$1635 = \$9615$$

The office furniture will cost \$9,615.

#### Example 4

*Problem:* how many lemonades at \$1.50 each do you need to sell to pay for 7 new signs (for advertising your lemonade) at \$8 each and 2 umbrellas (so people could sit in some shade as they drink their lemonade) at \$20 each?

*Solution:* the amount you earn must be more than (or equal to) the amount you spend.

How much will you spend?  $\$8 \times 7 + \$20 \times 2 = \$56 + \$40 = \$96$

How much do you need to earn to get \$96? Well, keep adding \$1.5 until you get \$96, or just above it.

1	2	3	4	5	6	...	62	63	64
\$1.5	\$3	\$4.5	\$6	\$7.5	\$9	...	\$93	\$94.50	\$96

But that just tell us how many times \$1.5 goes into \$96 (and it would take too long!!), so why not just divide?

							64		
1.5	96	---	>	15	960	---	>	15	960
							-90		
							60		
							-60		
							0		

You need to sell 64 lemonades to pay for your advertising and umbrellas.

#### Example 5

*Problem:* how much woolen cloth, at \$6 a yard, will it take to pay for 8 horses at \$60 each, and 14 cows at \$45 each? (From p. 69, Ray's New Practical Arithmetic by Joseph Ray, M.D., publishers Mott Media.)

*Solution:* The amount you earn must be more than (or equal to) the amount you spend.

How much will you spend?  $\$60 \times 8 + \$45 \times 14 = \$480 + \$630 = \$1,110$

How much do you need to earn to get \$1,110? Well, keep adding \$6 until you get \$1,110, or just above it.

1	2	3	4	5	6	...	183	184	185
\$6	\$12	\$18	\$24	\$30	\$36	...	\$1,098	\$1,104	\$1,110

But that just tells us how many times \$6 goes into \$1,110 (and it would take too long!!), so why not just divide?

	185
6	1,110
	<u>-6</u>
	51
	<u>-48</u>
	30
	<u>-30</u>
	0

You need to sell 185 yards of cloth to buy the horses and cows.

## Exercises

1. You buy 6 bottles of mineral water at Whole Foods for \$1.29 each. How much do you pay?
2. At the farmer's market, you buy 5 bottles of kombucha for \$2.50 each. How much do you pay?
3. At the farmer's market, you buy 8 bottles of kombucha at \$2.50 each and 3 packages of organic coffee beans at \$22.54 each. How much do you pay?
4. At the farmer's market, you buy 6 bottles of kombucha at \$2.50 each, 5 packages of organic coffee beans at \$22.54 each, and 2 bottles of local, organic olive oil at \$15.79 each. How much do you pay?
5. At the farmer's market, you buy 12 bottles of kombucha at \$2.50 each, 2 packages of organic coffee beans at \$22.54 each, 2 bottles of local, organic olive oil at \$15.79 each, and 3 jars of locally sourced, organic salsa at \$7.50 each. How much do you pay?
6. Adding new dimensions to your exercise routine, you want to buy a 15' rope to hang in a tree. It costs \$89. How many extra hours do you need to pick up at work to buy it if you make \$11.50 per hour?
7. Having an elegant backyard with a pool, you want to buy six lime trees to add to the effect. They cost \$95.49 a piece. How many wood chairs at \$89 a piece do you need to make and sell in order to pay for the trees?

8. You and your family plan on taking a two-week summer vacation. You estimate it will cost \$3,210. How many art prints do you need to sketch and sell for \$112 a piece to pay for it?

9. You want to buy 2 Yellow-collared Macaws at \$1,295 each and 3 Jardine's Parrots at \$1,042 each. How many pairs of sandals at \$89 a pair do you need to make and sell to buy the birds?

10. To store chemicals, you need to buy 8 barrels at \$4,350 for two and 15 barrels at \$2,450 for 3. How many luxury iPhone cases at \$989 a piece do you need to sell to pay for the barrels?

11. For a special request project (making some pajamas), you need to buy 200 yards of silk at \$87.95 for a 50 yard roll and 500 yards of silk at \$49.99 for a 20 yard roll. How many packages of homemade luxury towels at \$187 for a package of 4 do you need to sell to pay for the silk?

## Answers

1. The mineral water will cost \$7.74.
2. The kombucha will cost \$12.50.
3. The kombucha and coffee beans will cost \$87.62.
4. The kombucha, coffee, and olive oil will cost \$159.28.
5. The kombucha, coffee, olive oil, salsa will cost \$129.16.
6. You will need to work 8 hours to pay for the rope.
7. Sell 7 chairs, you can pay for the trees.
8. Sell 29 art prints, you can pay for the tires.
9. You will need to sell 65 pairs of sandals to afford the birds.
10. To pay for the barrels, you need to sell 72 iPhone cases.
11. You will need to sell 9 packages of towels to be able to buy the silk.