

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 add \$19.95 five times, in other words, multiply \$19.95 by 5:

$$\$19.95 \times 5 = \$99.75$$

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, add \$929 ten times, then add those two sums together; in other words, you need to do $\$200 \times 8 + \929×10 :

$$\$200 \times 8 + \$929 \times 10 = \$1600 + \$9290 = \$10,890$$

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 add \$2660 three times, add \$545 three times, then add those two sums together; in other words, you need to do $\$2660 \times 3 + \545×3 :

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

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: you need to see how much money you need to earn to pay for the signs and umbrellas.

1. Well, how much do the signs and umbrellas cost altogether?
2. Then, how much lemonade do you need to sell to buy them?

Step 1: you need to add \$8 seven times, add \$20 two times, then add the sums together; in other words, you need to do $\$8 \times 7 + \20×2 :

$$\$8 \times 7 + \$20 \times 2 = \$56 + \$40 = \$96$$

Step 2: you need to see how many lemonades you need to sell to make that \$96. Well, how many times will \$1.50 go into \$96? In other words, how many \$1.50s make up \$96? You need to divide to get the answer:

$$\$96/\$1.5 = 64$$

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: we need to see how much money we need to earn to pay for the cows and horses.

1. Well, how much do they cost altogether?
2. Then, how much cloth do we need to sell to buy them?

Step 1: you need to add \$60 eight times, add \$45 fourteen times, then add the sums together; in other words, you need to do $\$60 \times 8 + \45×14 :

$$\$60 \times 8 + \$45 \times 14 = \$480 + \$630 = \$1,110$$

Step 2: you need to see how much cloth you need to sell to make that \$1,110. Well, how many times will \$6 go into \$1,110? In other words, how many \$6s make up \$1,110? You need to divide to get the answer:

$$\$1,110/\$6 = 185$$

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

Exercises

1. Your turn to buy coffee at work! You buy 5 short coffees at Starbucks for \$1.79 each. How much do you pay?
2. At the farmer's market, you buy 5 packages of bacon for \$8.77 each. How much do you pay?
3. At the farmer's market, you buy 4 packages of lamb chops at \$20.45 each and 7 packages of ribeye steak at \$23.57 each. How much do you pay?
4. You and some friends are going to start doing some Crossfit and MovNat type workouts outside. Since you have the week off, you are doing the buying. They will pay you back, of course! You are going to buy 7 kettlebells at \$79 each, 7 harnesses (to pull and drag logs) at \$54.50 each, and 4 ropes at \$150 each. How much will it all cost?
5. At the farmer's market, you buy 3 bunches of carrots for \$1.97 each, 5 bunches of green onion for \$1.22 each, 5 bunches of kale for \$2.57 each, and 4 cantaloupes for \$2.33 each. How much do you pay?
6. So you can climb rope for exercise, you want to buy a 20' rope to hang in a tree. It costs \$129. How many extra hours do you need to work to buy it if you make \$15 per hour?
7. Having an elegant backyard with a pool, you want to buy four lime trees to add to the effect. They cost \$83.99 a piece. How many wood chairs at \$70 a piece do you need to make and sell in order to pay for the trees?

8. You need 4 new tires for your pickup truck. They cost (including tax and all) \$275 each. How many art prints do you need to sketch and sell for \$60 a piece to pay for the tires?

9. You want to buy 2 German Shepherds at \$2,100 each and 3 Ocicat cats at \$1,950 each. How many pairs of sandals at \$117 a pair do you need to sell to buy the dogs and cats?

10. For a special request project (making some pajamas), you need to buy 300 yards of silk at \$89.95 for a 50 yard roll and 100 yards of silk at \$39.99 for a 20 yard roll. How many packages of homemade luxury towels at \$134 for a package of 4 do you need to sell to pay for the silk?

Answers

1. The coffees will cost \$8.95.
2. The bacon will cost \$43.85.
3. The beef and lamb will cost \$246.79.
4. The exercise equipment will cost \$1,534.50.
5. The vegetables will cost \$34.18.
6. You will need to work 9 hours to pay for the rope.
7. Sell 5 chairs, you can pay for the trees.
8. Sell 19 art prints, you can pay for the tires.
9. You will need to sell 86 pairs of sandals to afford the Shepherds and Ocicats.
10. You will need to sell 6 packages of towels to be able to buy the silk.