1. Nicholas loves to run and can burn 400 calories in 15 minutes. At this rate, how many

hours would Nicholas have to run to burn 2400 calories?

1. Aleisha is exercising her business talents as the go-to classmate to get things from. She trades:

*2 bag of chips = 1 candy bar*

*1 bag of chips = 5 pencils*

*3 pencils = 2 gel pens*

If she’s successful at trading how many gel pens can she get for 1 candy bar?

1. Mr. Barry thought he was ordering square linoleum tiles that measured exactly 1 foot along the edge. He bought five cases of twelve tiles because the hallway he wants to tile is 15 feet long by 4 feet wide. It turns out that all the linoleum squares are 0.03 feet less than 1 foot along each edge. When he lays a single row of tiles the length of the hallway, what length gap will he have at the end? Express your answer to the nearest inch.
2. Ella estimates the distance between two cities on a map using her thumb from knuckle to thumb tip. The distance is 7 thumbs units. Pete then uses *his* thumb to measure the same distance and comes up with 6 thumb units. If Ella’s thumb unit measures 15 miles, what does Pete’s thumb unit measure?
3. Eugene and Florence are both reading different books and they read for 20 minutes a day during an after school program that runs Monday through Friday. Eugene reads 3 pages every 6 minutes and Florence reads 2 pages every 5 minutes. It takes Eugene 4 whole weeks to finish his book, and Florence takes 6 whole weeks to finish hers. Whose book is longer and by how many pages?
4. Ayden claims his dad can count to 1,000,000 saying each number. If on average it

takes 2 seconds to say each number, how long does it take to count to 1,000,000 without

taking any breaks? Round your answer to the nearest day.

1. The PTA is organizing an ice cream extravaganza with 8 flavors of ice cream. They

need a total of 5 gallons of ice cream. The 1.75-quart containers of ice cream are on sale

for $3.00 per container. How much will they spend on ice cream?

1. Tina’s walk home from work is 2 miles. After leaving work she walks 1000 feet and stops to get

a drink of water. Tina then walks an additional quarter of a mile and gets her mail. How much

further does she need to walk? Give your answer in feet. 1 mile = 5280 feet.

**BONUS PROBLEMS**

1. If you hear thunder 27½ seconds after you see lightning, how far away is the storm? (Remember that it takes sound 5 seconds to travel one mile. For the purposes of this problem, assume that light travels instantaneously.)
2. Terry drives a distance of 20 miles at an average rate of 50 MPH (miles per hour). Sherry drives 20 miles at an average rate of 40 MPH. Neither person stops. How many fewer minutes does Terry need to complete the trip than Sherry does?
3. If a chocolate frog can jump 560 inches in 10 seconds, how many yards can it jump per second? (Answer as a reduced mixed fraction.)
4. 12 ¾ feet equals 3.886 meters. How many meters equal 8 $\frac{7}{16}$ feet?

**Solutions**

*Note: There are many acceptable strategies to solving each problem. This sheet shows just one strategy.*

1. Nicholas is burning 400 calories per 15 minutes. Since 400 goes into 2400 exactly 6 times, it takes 6 sets of 15 minutes to burn 2400 calories. This means it takes 90 minutes to burn 2400 calories. 90 minutes is equivalent to 1.5 hours.

**Answer: 1 ½ hours**

1. 1 candy bar 🡺 2 bags of chips 🡺 10 pencils 🡺 ? gel pens

She can trade 3 pencils for 2 gel pens. Since she has 10 pencils, she can make 3 trades, and still have one pencil left over. If she makes 3 trades, she will end up with 2x3=6 gel pens.

**Answer: 6 gel pens**

1. There are 15 tiles along the length of the hallway (15 ft. hallway ÷ 1 ft tiles).

Each tile contributes a 0.03 ft. gap.

Total gap = 15 × 0.03 = 0.45 ft.

Converting feet to inches, total gap = 12 × 0.45 ft. = 5.4 in.

**Answer: 5 in.**

1. Using Ella’s measurement, the distance between the two cities must be 7 thumb units x 15 miles per thumb unit = 105 miles. Since Pete measures 6 of his own thumb units for the same distance on the map, his thumb unit must be 105 ÷ 6 = 17.5.

**Answer: 17.5 miles**

1. Eugene reads 10 pages each day (one-half of a page every minute x 20 minutes).

Florence reads 8 pages each day (two-fifths of a page every minute x 20 minutes).

So, the number of pages in Eugene’s book is: 4 weeks x 5 days per week x 10 pages per day = 200 pages

The number of pages in Florence’s book is: 6 weeks x 5 days per week x 8 pages per day = 240 pages.

**Answer: Florence’s book is longer by 40 pages.**

1. If it takes 2 seconds to count each number, and there are a million numbers, then it takes 2,000,000 (two million) seconds. Converting this to days …

2,000,000 seconds ÷ 60 (seconds per minute) = 33333.33333 minutes

33333.33333 minutes ÷ 60 (minutes per hour) = 555.555555 hours

555.55555 hours ÷ 24 (hours per day) = 23.148148 days

**Answer: 23 days**

1. 5 gallons is equivalent to 20 quarts (four quarts per gallon). So, the number of 1.75-quart containers you would need to buy is:

20 ÷ 1.75 = 11.429 containers

Since we can’t buy a fraction of a container, we will need 12 containers. Each container costs $3.00, so we will spend a total of $36.00.

**Answer: $36.00**

1. The problem becomes easier if we work through it using feet instead of miles. Tina’s total distance between home and work is:

2 miles x 5280 (feet per mile) = 10,560 feet

She walks 1000 feet + 1320 feet (¼ of a mile), for a total of 2320 feet. Therefore, she needs to still walk an additional:

10,560 – 2,320 = 8,240 feet

**Answer: 8,240 feet**

1. 27 ½ seconds ÷ 5 miles per second = 5 1/2.

**Answer: 5 ½ miles**

1. At 50 miles per hour, for 20 miles Terry takes $\frac{1}{50}$ x 20 x 60 = 24 minutes

At 40 miles per hour, for 20 miles Sherry takes $\frac{1}{40}$ x 20 x 60 = 30 minutes

So Terry takes 6 fewer minutes.

**Answer: 6 minutes**

1. 560 inches in 10 seconds

= 56 inches per second

= 56 ÷ 12 (inches per foot) ÷ 3 (feet per yard) = 1$\frac{5}{9}$ yards per second

**Answer: 1**$\frac{5}{9}$ **yards**

1. (3.886 ÷ 12¾) x 8 $\frac{7}{16}$ = 2.572

**Answer: 2.572 meters**