Answer questions 69 through 78.

69 A chef uses $3\frac{3}{4}$ pounds of semolina flour and $1\frac{5}{8}$ pound whole wheat flour for each batch of pasta she makes. One week she uses a total of 86 pounds of flour.

Part A

Write an equation to solve for *b*, the number of batches of pasta the chef makes during the week.

Equation _____

Part B

How many batches of pasta does she make?

Show your work.

Answer _____

70 Coach Wilson ordered T-shirts for the basketball team from two different T-shirt suppliers. One supplier charged $16 for each shirt, as well as 5% for shipping. The other supplier charged $18 for each shirt, plus 7% for shipping.

Part A

Coach Wilson ordered the same number of shirts from each supplier. Write two expressions to represent the shipping charges he paid to both suppliers. Use x to represent the number of shirts ordered.

Expressions _____

Part B

The first supplier gave Coach Wilson a discount of 10% off of his order total. The second supplier gave him a discount of $20 off of his order total. Write two equations to represent the total costs he paid to each supplier. Use x to represent the number of shirts ordered.

Equation _____

Part C

Coach Wilson ordered 15 T-shirts from each supplier. How much did he pay?

Show your work.

Answer $_____

Go On

71 Mr. Williams is planning a seventh-grade field trip to a math museum. School policy requires a minimum of 2 adults as chaperones for every 9 students on the trip, and allows a food budget of $6 per person. Educational group pricing at the museum is $4.50 per student and $7.25 per adult. There is also a bus parking fee that is 4% of the total ticket price.

Part A

There are 171 students in seventh grade. How much does money does Mr. Williams need to budget for the museum tickets and parking?

Show your work.

Answer $_____

Part B

What is the total budget for tickets, parking, and food for all students and chaperones to go on the field trip?

Show your work.

Answer $_____

72 Sam's employer deducts 20% in payroll and state taxes from his base salary before writing his paycheck. Sam's monthly paycheck is $1,600.

Part A

What is Sam's salary before the deductions for payroll and state taxes?

Show your work.

Answer $_____

Part B

Sam puts $\frac{1}{5}$ of his paycheck into a savings account each month. How much does he save each month?

Show your work.

Answer $_____

Part C

Next month Sam's employer is changing its pay scale, and Sam's base salary will change by −8%. His employer will still deduct 20% for taxes. What will be his salary before deductions, and how much will his paycheck be next month?

Show your work.

Answer _____

Go On

73 William and Amy are stuffing envelopes for a charity. Today, William stuffed a total of 70 envelopes. This is 10 more than twice the number of envelopes that Amy stuffed.

Part A

Write an equation that can be used to find the number of envelopes, *a*, that Amy stuffed.

Equation _____

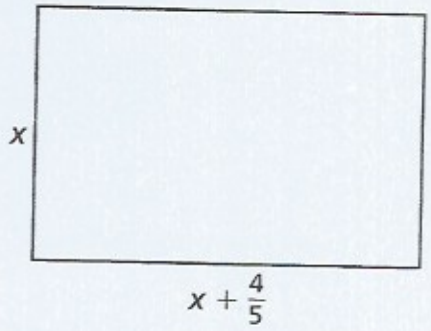
Part B

How many envelopes did Amy stuff?

Show your work.

Answer _____

74 The dimensions of a rectangle are given in terms of x as shown below.



Part A

Write an expression representing the perimeter of the rectangle.

Expression _____

Part B

Explain how the expression $2\left(2x + \frac{4}{5}\right)$ is equivalent to the perimeter of the rectangle.

_____

_____

_____

_____

Part C

The perimeter of the rectangle is $7\frac{3}{5}$ units. What is the value of x?

Show your work.

Answer _____

Go On

75 Patricia had less than $9 to spend when she went to the grocery store. She bought 1 pound of tomatoes and wanted to spend the rest of her money on potatoes. One pound of tomatoes costs $2.40, and one pound of potatoes costs $2.20.

Part A

Write an inequality to show how many pounds of potatoes, x, Patricia can buy.

Inequality _____

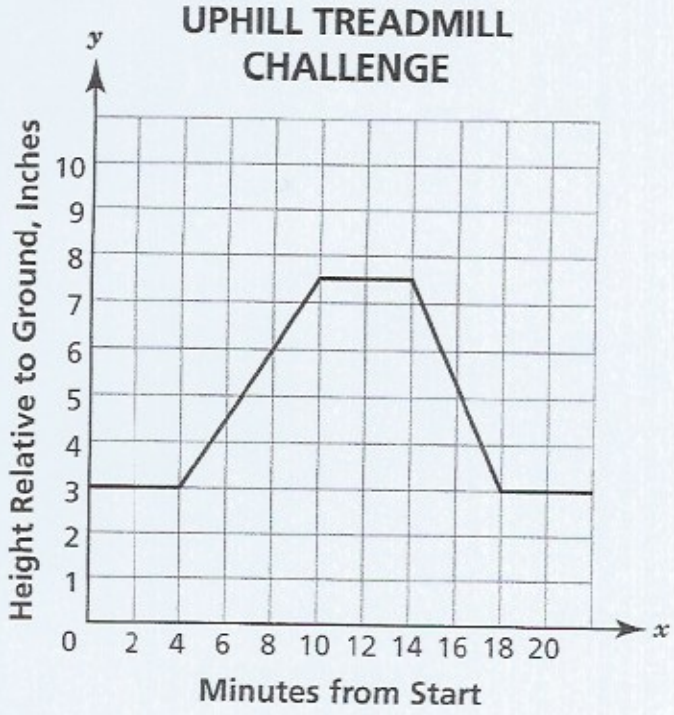
Part B

Solve the inequality from Part A to find how many pounds of potatoes Patricia can buy.

Show your work.

Answer _____

76 The graph below represents Landon's elevation relative to the ground as he runs on a treadmill for a programmed course.



Part A

How many inches does Landon's elevation change per minute between 4 minutes and 8 minutes?

Answer _____ inches

Part B

During which time period does Landon's elevation change the fastest? Explain how you know.

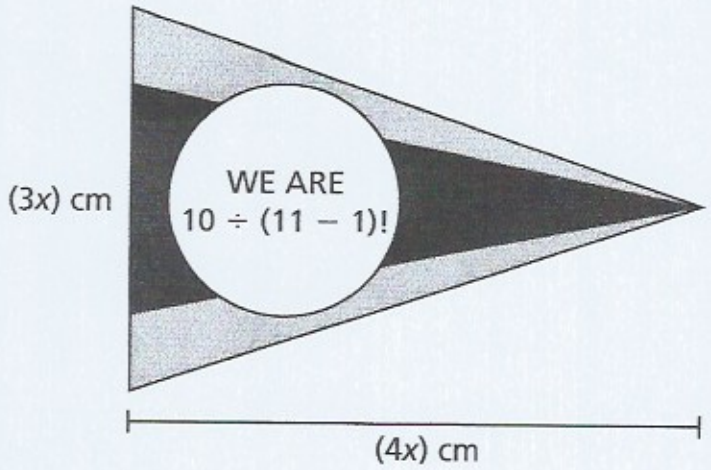
_____

_____

_____

Go On

77 Louie and Johnna made a table flag for the math team to have during competitions. The flag is shown below.



Part A

Write an expression to represent the area of the flag in square centimeters.

Expression _____

Part B

The team decides to replicate the flag on a T-shirt by using the same design with dimensions that are 1.5 as great. Write an expression representing the area of the T-shirt design in square centimeters.

Expression _____

Part C

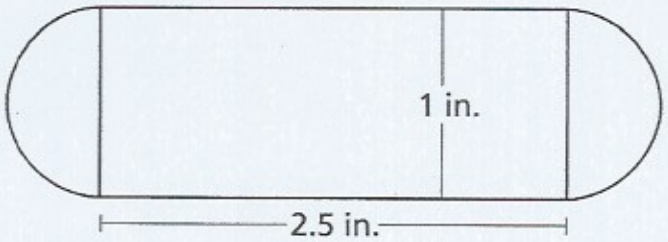
Johnna's method for determining the ratio of the areas of the table flag and the T-shirt design is shown below.

"If $x = 1$ centimeter, then the flag's area is $0.5(3)(4) = 6$ square centimeters. The T-shirt design will have dimensions of $3(1.5) = 4.5$ and $4(1.5) = 6$, so it's area is $0.5(4.5)(6) = 13.5$ square centimeters. The ratio of the area of the T-shirt design to the area of the flag is 13.5 to 6, or $\frac{13.5}{6} = 2.25$."

Explain why $(1.5)^2$ is related to the ratio of the areas of the T-shirt design and table flag.

Go On

78 The city is planning to add a fish pond to a neighborhood park. The figure below is a scale drawing of the fish pond. Its scale is $\frac{1}{2}$ inch = 15 feet.



Part A

To the nearest hundredth, what is the area of the actual fish pond?

Show your work.

Answer _____ square feet

Part B

The city will place a low fence around the entire fish pond. To the nearest hundredth, how long will the fence be?

Show your work.

Answer _____ feet

STOP