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If we look at the number 572, it has the following:

- A 2 in the ones position
- A 7 in the tens position
- A 5 in the hundreds position

5	7	2
hundreds	tens	ones

The 5 does not have a value of 5. It has a value of 5 hundreds or 500 because it is in the hundreds place.

The 7 has a value of 7 tens or 70 because it is in the tens place.

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We can also write decimal numbers in expanded form.

In expanded form, the number 7,358.125 can be shown as follows:

$$7,358.125 = 7000 + 300 + 50 + 8 + 0.1 + 0.02 + 0.005$$

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Step 3 Find the product of the tens digit in the second number multiplied by each digit in the top number. Remember place value! Write the product under the product from step 2.

4, 5 7 2	2 3 4 1
×	4, 5 7 2
1 3 7 1 6	6 0
2 7 4 3 2 0	2 7 4 3 2 0

←

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Example 3

Evaluate each.

a) $12 \div (2 + 4) + 7^2$

b) $150 - (3 + 7)^2 \div 25$

Solution

a) $12 \div (\underline{2 + 4}) + 7^2$

$$= 12 \div 6 + \underline{7^2}$$

$$= \underline{12 \div 6} + 49$$

$$= \underline{2 + 49}$$

$$= 51$$

Perform the operations inside the parentheses first.

Next, evaluate 7^2 . It means 7×7 .

Now divide.

Finally, add.

b) $150 - (\underline{3 + 7})^2 \div 25$

$$= 150 - \underline{(10)^2} \div 25$$

$$= 150 - \underline{100 \div 25}$$

$$= \underline{150 - 4}$$

$$= 146$$

Perform the operations inside the parentheses first.

Next, evaluate 10^2 . It means 10×10 .

Now divide.

Finally, subtract.

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5. Calculate each. Be careful with the exponents.

f) $5 + 6^2 \div (3 \times 3)$

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4. Calculate.

d) $(2.5 \div 5) + (1.5 \times 2)$

h) $2 \times (2.5 + 1) - 6 \div 1.2$

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3. Write an expression for each sentence and solve.
- b) finding the difference of 15 and 6 and dividing the result by the sum of 1 and 2

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2. Write each of the following as a sentence and solve.
- b) $2 \times m - 4 = 56$

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3. Write a problem for each of these math sentences.
- b) $41 - 3 \times n = 29$

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2. Calculate.
- b) $(2.5 - 1.5) + 6 \div 1.2$ f) $2.4 \times (2.5 + 1.5) - 3.6 \div 1.2$

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6. Write each math sentence in words.
- b) $25 + 5 \times n = 30$

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Example 4

Write 0.38 as a fraction.

Solution

38 will be the numerator.

0.38 has two decimal places, so the denominator will be 100.

The resulting fraction is $\frac{38}{100}$.

Simplify the fraction to its simplest form:

$$\frac{38}{100} = \frac{38 \div 2}{100 \div 2} = \frac{19}{50}$$

0.38 is equal $\frac{19}{50}$ as a fraction.

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Example 2

Find the difference of $\frac{21}{30} - \frac{11}{30}$.

Solution

$$\frac{21}{30} - \frac{11}{30} = \frac{21 - 11}{30} = \frac{10}{30}$$

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Example 1

Convert 48 ounces into pounds.

Solution

Look at the pattern. From the table, 16 ounces = 1 pound.

$$16 \text{ ounces} = 16 \div 16 \text{ ounces} = 1 \text{ pound}$$

$$32 \text{ ounces} = 32 \div 16 \text{ ounces} = 2 \text{ pounds}$$

$$48 \text{ ounces} = 48 \div 16 \text{ ounces} = 3 \text{ pounds}$$

The pattern suggests that to convert ounces into pounds, divide by 16.

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Example 1

Suppose Jophiel had a stuffed toy that was 22 inches tall and another one that is $1\frac{1}{4}$ feet tall. What is the difference in their heights?

Solution

Convert $1\frac{1}{4}$ feet to inches.

$$1\frac{1}{4} \times 12 = 15 \text{ inches}$$

Now, subtract.

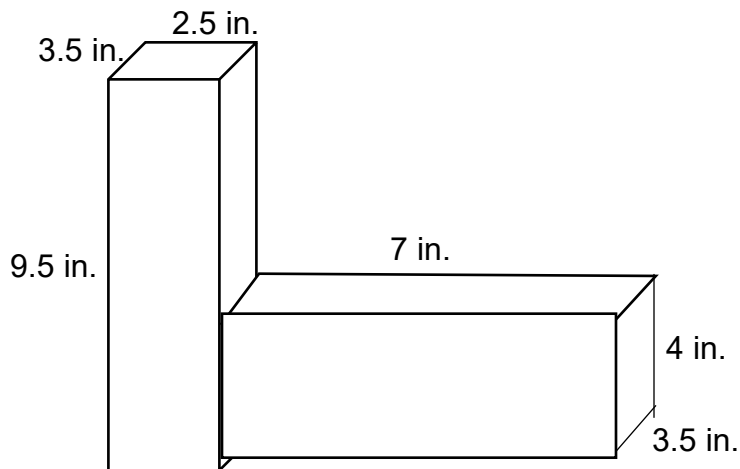
$$22 \text{ inches} - 15 \text{ inches} = 7 \text{ inches}$$

The difference in height is 7 inches.

Jophiel decided to convert $1\frac{1}{4}$ feet to inches because Jophiel finds it easier to work with whole numbers when subtracting.

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6. Find the volume of this shape.



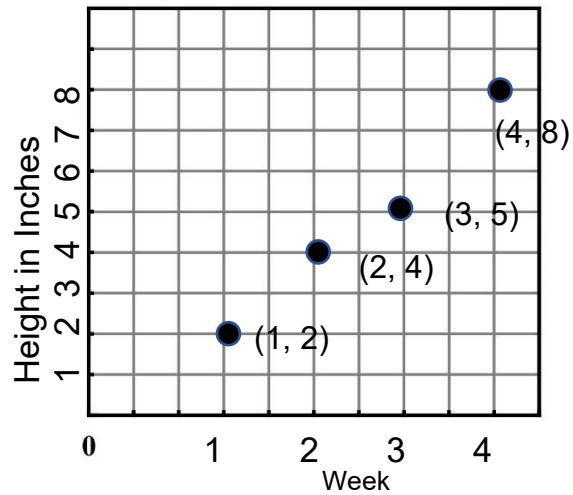
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Jolene saw that she had these ordered pairs from the data.

(1, 2) (2, 4)
 (3, 5) (4, 8)

What pattern did she see once she plotted the data?

Jolene noticed that the plant was growing higher each week. It was very close to growing the same amount each week.



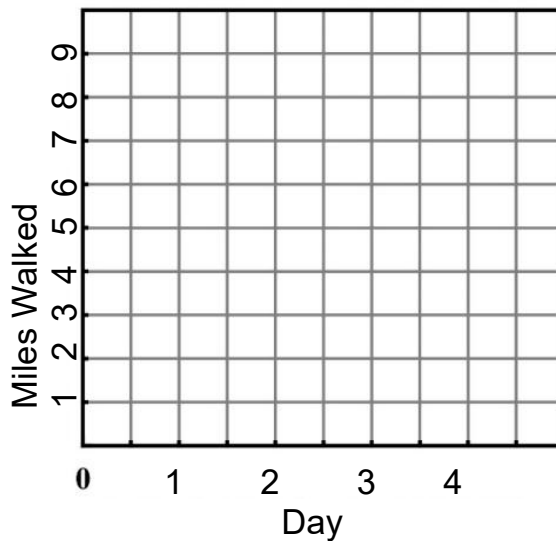
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2. A table with some data is shown below.

End of Day	1	2	3	4
Total Miles Walked	3	6	7	9

a) Write the ordered pairs that come from the table.

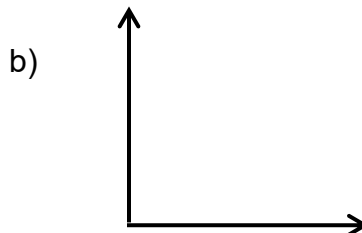
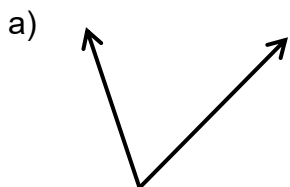
b) Plot the ordered pairs on the grid.



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Exercises 10.3

1. Write whether each angle show is acute, obtuse, right or straight.
Explain how you know.



Type of angle _____

Type of angle _____

Reason for choice _____

Reason for choice _____

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6.

Shape Name	Picture	Definition
Square		Two pairs of parallel sides and <u>4</u> congruent sides.
Rectangle		Two pairs of parallel sides and
Parallelogram		Two pairs of parallel sides and
Trapezoid		One pair of parallel sides and

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2. The number of hours studying and the results on a test are shown below.

Hours Studying	2	1	4	3	5	5
Test Score (%)	71	54	82	79	85	90

- a) Create a scatterplot.
- b) Is there a pattern shown in the scatterplot? If so, what pattern is suggested?

