

Assignment

Write

Write the steps you would follow to evaluate an expression for a variable. Use an example in your description.

Remember

Percent error is one way to report the difference between estimated values and actual values.

$$\text{Percent error} = \frac{\text{actual value} - \text{estimated value}}{\text{actual value}}$$

Practice

Write an expression with rational numbers to represent each situation and then solve. Show your work.

1. Jaxon's start-up business makes a profit of \$450 during the first month. However, the company records a profit of $-\$60$ per month for the next four months and profit of \$125 for the final month. What is the total profit for the first six months of Jaxon's business?
2. A diver is exploring the waters of the Great Barrier Reef.
 - a. She is currently -5 feet from the surface of the water and plans to explore a shipwreck that is at -75 feet from the surface. If she moves at a rate of -8 feet per minute, how many minutes does it take the diver to reach the shipwreck?
 - b. When she is done exploring the reef, she ascends at a rate of 5 feet per minute. Once she reaches a height of -30 feet, she must rest for 15 minutes to allow her body to adapt to the changing water pressure. She then continues to the surface at the same rate. How long will it take the diver to reach the surface?
3. The drain in your 45-gallon bathtub is partially clogged, but you need to take a shower. The showerhead had a flow rate of 2.25 gallons per minute, but the bathtub only drains at a rate of -0.5 gallons per minute. What is the longest shower you can take?
4. Tesha withdrew \$22.75 each week for four weeks from her savings account to pay for her piano lessons. By how much did these lessons change her savings account balance?

Calculate the percent error.

5. Jerri estimated that 30 people would attend the dinner event, but only 25 people attended.
6. Gene estimated the length of the fence to be 150 feet, but the actual measurement was 142 feet.

Evaluate each expression for the given value.

7. $\frac{5}{6}x$ for $x = -8$

8. $9\frac{1}{3} - m$ for $m = -1\frac{2}{3}$

9. $t \div \frac{3}{4}$ for $t = 9\frac{3}{4}$

10. $\frac{2}{5}k - 3\frac{1}{2}$ for $k = 15$

Stretch

Solve each equation.

1. $x + 4.5 = 9.125$

2. $\frac{4}{5}(p + 1) = 1$

3. $\frac{g}{8} - 5 = 1\frac{1}{2}$

Review

Convert each fraction to a decimal. Classify the decimal as terminating or non-terminating and, if applicable, repeating or non-repeating.

1. $\frac{11}{12}$

2. $\frac{11}{14}$

Determine each absolute value. Show your work.

3. $|-5 - (-7)|$

4. $\left|-\frac{3}{8} + \frac{1}{6}\right|$

Determine each quotient.

5. $\frac{3}{4} \div \frac{4}{3}$

6. $\frac{1}{8} \div \frac{1}{5}$