

Finding the Percent of Increase or Decrease

Objectives:

- To find the “percent of increase or decrease” using the percent box

Outcomes:

- To complete the “Percent (rate) of Increase or Decrease” worksheet with at least a 90% score

Warm-Up:

The percent box is an excellent tool for the visual learner. It is easy to remember and easy to use, making these more difficult percent problems much less complicated. The student does not need to do percent or fraction conversions when using the box.

The main box is divided into four squares. The upper left square is marked “is/part”. The lower left square is marked “of/whole”. The upper right square is marked “percent”, and finally the bottom right square is always filled in with “100”. After placing the numbers in the appropriate squares, cross-multiply the numbers in the two filled-in squares that are diagonal from each other. Divide the answer by the leftover number.

| | |
|-----------------|------------|
| Is/Part | % |
| Of/Whole | 100 |

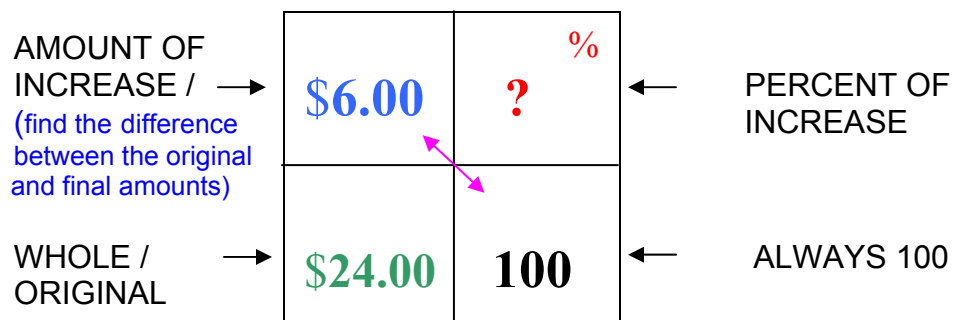
New Instruction:

The boxes are color coordinated for easy placement of numbers.

FINDING THE PERCENT OF INCREASE OR DECREASE

ORIGINAL AMOUNT \$24.00 FINAL AMOUNT \$30.00

FIND THE PERCENT (RATE) OF INCREASE.



1. **Subtract** original amount from final amount.
 $\$30.00 - \$24.00 = \$6.00$ (amount of increase)
2. **Cross-multiply** numbers in two filled-in boxes.
 $\$6.00 \times 100 = 600$
3. **Divide** result by the **extra number**.
 $600 \div \$24.00 = 25\%$

ANSWER: 25% is the percent/rate of increase.

ORIGINAL AMOUNT \$50.00 FINAL AMOUNT \$45.00

FIND THE PERCENT (RATE) OF DECREASE.

| | | | |
|--|--------|-----|--------------------------|
| AMOUNT → OF DECREASE <small>(find the difference between the original and final amounts)</small> | \$5.00 | ? % | ← PERCENT OF DECREASE |
| WHOLE/ ORIGINAL → | \$50 | 100 | ← ALWAYS 100 |

1. **Subtract** the final amount from the original amount.
 $\$50.00 - \$45.00 = \$5.00$ (amount of decrease)
2. **Cross-multiply** numbers in the two filled-in squares.
 $\$5.00 \times 100 = 500$
3. **Divide** result (500) by the **extra number** ($500 \div 50 = 10\%$).

ANSWER: 10% is the percent/rate of decrease

Feedback and Review:

Practice what you have learned by doing the following problems using the percent box.

1. **Find the rate of increase:**
Original amount: \$2000
Final amount: \$3000
2. **Find the rate of decrease:**
Original amount: \$75
Final amount: \$60
3. **Find the rate of increase:**
Original amount: 52,500
Final amount: 60,000
4. Rebekah bought a house for \$45,000. In three years its value increased to \$65,000. What is the percent of increase?

5. Last year the prison housed 1,200 inmates. This year the number decreased to 980. What is the percent of decrease?
6. Last semester the college enrolled 15 in its tutoring program, this year there 27 students that need help. What is the percent of increase?
7. Candy bars were 0.10 in 1972 and now they are 0.65. What is the percent of increase?
8. The value of the inventory at the five and dime store increased from \$46,400 to \$52,200 from one year to the next. What is the percent of increase in the value of the inventory?
9. The price of a sofa increased from \$520.00 to 582.40. What is the percent of increase?

Answers:

1. 50%
2. 20%
3. 14.3%
4. 44.4%
5. 18.3%
6. 80%
7. 550%
8. 12.5%
9. 12%

Transfer of Knowledge or Skills:

For further practice, go to <http://www.edhelper.com/math/percent10.htm> .