Percent Increase or Decrease Worksheet

Decide whether the change is an increase or decrease \( \uparrow \downarrow \) and find the percent using the formula \( \frac{\text{change}}{\text{original}} \).

1. Before: 10  
   After: 12
2. Before: 15  
   After: 12
3. Before: 75  
   After: 60
4. Before: 110  
   After: 143
5. Before: 90  
   After: 200
6. Before: 260  
   After: 160

7. 1994 Cost: $171.33  
   1995 Cost: $201.59
   Sale Price: $22.39
9. Start Price: $521.73  
   End Price: 413.68

10. 2004 Cost: $18.77  
    2005 Cost: $19.17
11. Original Number: 45  
    New Number: 72
12. Original Number: 45  
    New Number: 18
Percent of Change – Given the %, Find the Missing Number

Use the \[ \frac{\text{change}}{\text{original}} = \frac{\%}{100} \] proportion, fill in what you know and solve for the missing number.

1. Last year the 6th grade had 350 students. This year the number decreased 36%. How many students are in this year’s 6th grade class?

2. Enrollment in the Ski/Snowboard Club increased by 30% this year. There are now 182 students in the club. How many students were there last year?

3. The Game Stop is having a sale and all games are reduced by 55%. If a game is now $29.99, what was the original price? Round your answer to the nearest cent.

4. AYSO has 18 8th grade boys’ teams this year, but this is a 28% (rounded to the nearest whole number) decrease from the prior year. How many 8th grade teams were there last year?
Percent Increase or Decrease Worksheet

Decide whether the change is an increase or decrease (↑↓) and find the percent using the formula \[ \frac{\text{change}}{\text{original}} = \frac{\Delta}{\text{ORIG}} = \frac{\%}{100} \]

1. Before: 10
   After: 12 ↑
   \[ \frac{2}{10} = x \]
   \[ x = 20\% \uparrow \]

2. Before: 15
   After: 12 ↓
   \[ \frac{3}{15} = x \]
   \[ x = 20\% \downarrow \]

3. Before: 75
   After: 60 ↓
   \[ \frac{15}{75} = x \]
   \[ x = 20\% \downarrow \]

4. Before: 110
   After: 143 ↑
   \[ \frac{33}{110} = x \]
   \[ x = 30\% \uparrow \]

5. Before: 90
   After: 200 ↑
   \[ \frac{110}{90} = x \]
   \[ x = 122\% \uparrow \]

6. Before: 260
   After: 160 ↓
   \[ \frac{100}{260} = x \]
   \[ x = 38\% \downarrow \]

7. 1994 Cost: $171.33
    1995 Cost: $201.59
   \[ \frac{30.26}{171.33} = x \]
   \[ x = 18\% \uparrow \]

    Sale Price: $22.39
   \[ \frac{21.99 - 22.39}{31.99} = x \]
   \[ x = 30\% \downarrow \]

9. Start Price: $521.73
    End Price: 413.68 ↓
   \[ \frac{108.05}{521.73} = x \]
   \[ x = 21\% \downarrow \]

10. 2004 Cost: $18.77
     2005 Cost: $19.17
    \[ \frac{0.40}{18.77} = x \]
     \[ x = 2\% \uparrow \]

11. Original Number: 45
    New Number: 72
    \[ \frac{27}{45} = x \]
    \[ x = 60\% \uparrow \]

12. Original Number: 45
    New Number: 18
    \[ \frac{27}{45} = x \]
    \[ x = 60\% \downarrow \]
Percent of Change – Given the %, Find the Missing Number

Use the proportion, fill in what you know and solve for the missing number.

1. Last year the 6th grade had 350 students. This year the number decreased 36%. How many students are in this year’s 6th grade class?

\[
\frac{350 - x}{350} = \frac{36}{100}
\]

\[
\frac{350 - x}{350} = 0.36
\]

\[
x = 224 \text{ students}
\]

2. Enrollment in the Ski/Snowboard Club increased by 30% this year. There are now 182 students in the club. How many students were there last year?

\[
\frac{182 - x}{x} = \frac{30}{100}
\]

\[
\frac{182 - x}{x} = 0.3
\]

\[
x = 140 \text{ students}
\]

3. The Game Stop is having a sale and all games are reduced by 55%. If a game is now $29.99, what was the original price? Round your answer to the nearest cent.

$29.99 = \frac{X - 29.99}{X} = \frac{55}{100}$

\[
100(X - 29.99) = 55X
\]

\[
X = 66.64 \text{ was the original price.}
\]

4. AYSO has 18 8th grade boys’ teams this year, but this is a 28% (rounded to the nearest whole number) decrease from the prior year. How many 8th grade teams were there last year?

\[
\frac{x - 18}{x} = \frac{28}{100}
\]

\[
7x = 25(x - 18)
\]

\[
7x = 25x - 450
\]

\[
-25x
\]

\[
-18x = -450
\]

\[
-18
\]

\[
X = 25 \text{ teams last year}
\]