

Grade 7 · Percent Increase, Percent Decrease and Percent Error · Quiz

Common Core 7.RP.A.3 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

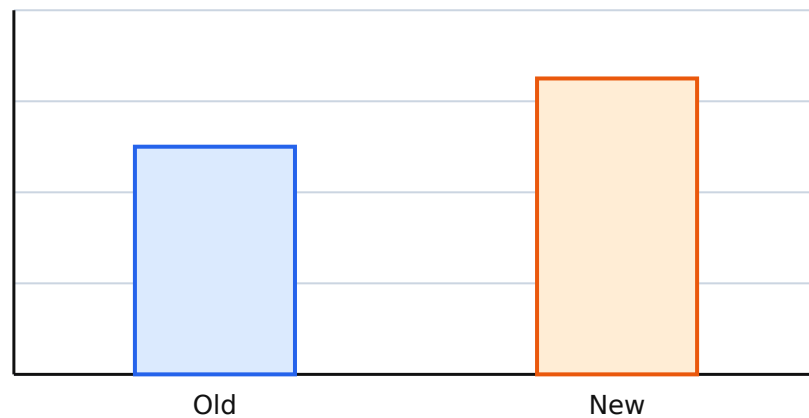
Try these 10 multiple-choice questions on percent increase, percent decrease, new and original amounts, and percent error. Divide by the right base amount each time, and read the bar charts carefully before you choose.

Grade 7 Common Core: 7.RP.A.3

Questions

Question 1

The price of a game rose from to . What is the percent increase?

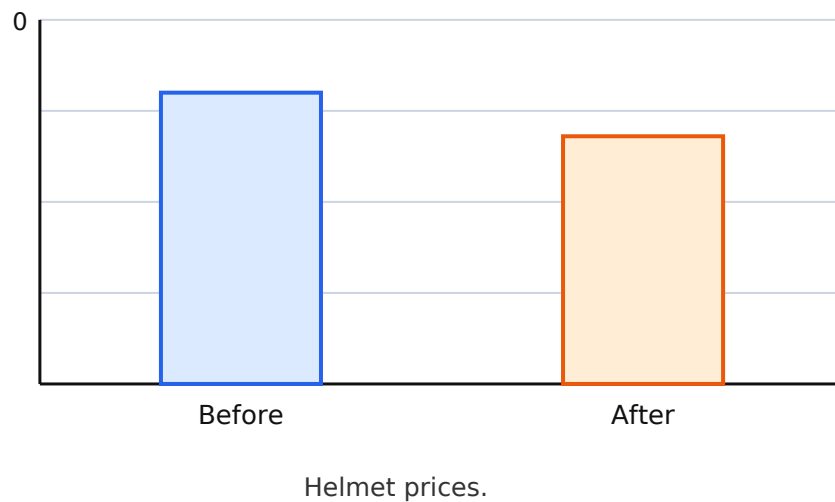


Old and new price.

- A. 15%
- B. 23%
- C. 30%
- D. 130%

Question 2

A bike helmet drops from to . What is the percent decrease?



- A. 12%
- B. 18%
- C. 85%
- D. 15%

Question 3

Which single multiplier gives the new amount after a 35% decrease?

- A. 0.65
- B. 0.35
- C. 1.35
- D. 0.065

Question 4

A pair of shorts is 20% off. What is the sale price?

Question 5

After a 25% increase, a value is 75. What was the original value?

- A. 56.25
- B. 93.75
- C. 50
- D. 60

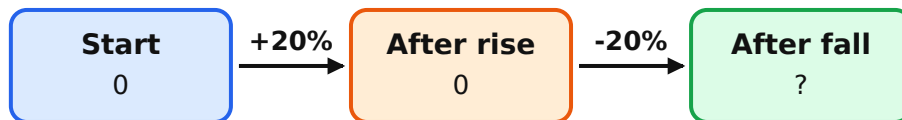
Question 6

Sofia measures a rope as 9.5 feet. The actual length is 10 feet. What is the percent error?

- A. 0.5%
- B. 5.3%
- C. 5%
- D. 95%

Question 7

A price of 0 rises by 20% and then falls by 20%. How does the final price compare with 0?



The second change applies to 0, not 0.

- A. The same
- B. 4% lower
- C. 20% lower
- D. 4% higher

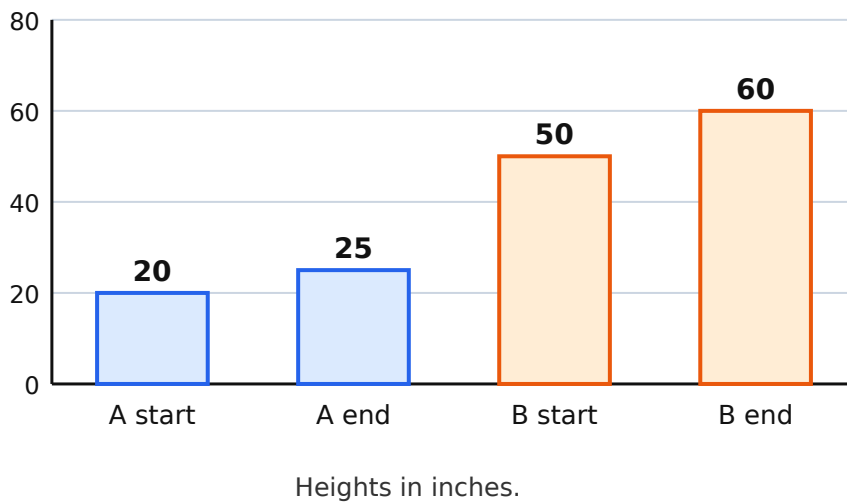
Question 8

A skate park pass falls from to . What percent off is that?

- A. 25%
- B. 12%
- C. 20%
- D. 80%

Question 9

Plant A grew from 20 to 25 inches. Plant B grew from 50 to 60 inches. Which grew by the greater percent?



- A. Plant B: it grew 10 in compared with 5 in
- B. Plant A: 25% compared with 20%
- C. Both grew by the same percent
- D. Plant B: 60 is greater than 25

Question 10

A .00 purchase has 8% sales tax. What is the total?

- A. .00
- B. .08
- C. .00
- D. .00

Answer key

1. **C** - The change is and $\frac{15}{50} = 0.30$. Using as a percent, or dividing by the new price ($\approx 23\%$), are the usual mistakes.
2. **D** - The drop is and $\frac{12}{80} = 0.15$. The number 12 is the change in dollars, not a percent, and 85% is the percent that remains.
3. **A** - A 35% decrease leaves $100\% - 35\% = 65\%$, so multiply by 0.65. The multiplier 0.35 is the amount removed, and 1.35 is for an increase.
4. **D** - $0.20 \times 45 = 9$ is the discount; $45 - 9 = 36$ is the sale price. Stopping at gives the savings, not the price.
5. **D** - $75 \div 1.25 = 60$. Subtracting 25% of 75 gives 56.25, and subtracting 25 gives 50; both take the percent of the wrong amount.
6. **C** - The error is 0.5 ft and $\frac{0.5}{10} = 0.05 = 5\%$. Dividing by the measured value gives 5.3%; percent error divides by the actual value.
7. **B** - $100 \times 1.20 = 120$, then $120 \times 0.80 = 96$, which is 4% below 100. The second percent is taken of a larger amount.
8. **C** - The drop is and $\frac{12}{60} = 0.20$. Dividing by the new price (48) gives 25%; 80% is the part that remains.
9. **B** - Plant A: $\frac{5}{20} = 25\%$. Plant B: $\frac{10}{50} = 20\%$. Comparing inches ignores the different starting heights.
10. **A** - Tax is $0.08 \times 25 = 2.00$, so the total is $25 + 2 = 27$. Adding 8 cents treats 8% as 0.08 dollars; .00 is only the tax.

Remember:

- Percent change = $\frac{\text{new} - \text{original}}{\text{original}} \times 100\%$; always divide by the original.
- A $p\%$ increase multiplies by $1 + \frac{p}{100}$; a $p\%$ decrease multiplies by $1 - \frac{p}{100}$.
- To find the original amount, divide the new amount by the multiplier.
- Percent error = $\frac{|\text{measured} - \text{actual}|}{\text{actual}} \times 100\%$ and is never negative.
- A percent increase can be larger than 100%; a percent decrease can never exceed 100%.