Percent of Increase and Decrease

Name: _____	Date: _____	Score: _____ / 18

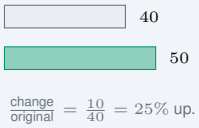
Quick Review and Helpful Hints

A percent change compares the *amount of change* to the *original* amount: percent change $= \frac{\text{change}}{\text{original}} \times 100\%$. If the new value is larger it is a percent *increase*; if smaller, a percent *decrease*. Always divide by the original (starting) amount, not the new one.

▷ **Example:** A price rises from $\$40$ to $\$50$. Find the percent increase.

Work: The change is $50 - 40 = 10$. Divide by the original: $\frac{10}{40} = 0.25$, then multiply by 100%.

★ **Answer:** 25% increase



Practice Problems

Find each percent of increase or decrease.

1. $20 \to 25$ _____

2. $50 \to 40$ _____

3. $80 \to 100$ _____

4. $60 \to 45$ _____

5. $10 \to 15$ _____

6. $200 \to 150$ _____

7. $30 \to 36$ _____

8. $90 \to 72$ _____

9. $25 \to 30$ _____

10. $120 \to 90$ _____

11. $40 \to 60$ _____

12. $75 \to 60$ _____

13. $8 \to 10$ _____

14. $50 \to 35$ _____

Word Problems

15. A shirt's price went from $\$25$ to $\$30$. What is the percent increase?

16. A town's population grew from 800 to 1000. What is the percent increase?

17. A $\$80$ item is marked down to $\$60$. What is the percent decrease?

18. A person's weight dropped from 150 lb to 120 lb. What is the percent decrease?

Answer Keys

1. 25% increase	**7.** 20% increase	**13.** 25% increase
2. 20% decrease	**8.** 20% decrease	**14.** 30% decrease
3. 25% increase	**9.** 20% increase	**15.** 20% increase
4. 25% decrease	**10.** 25% decrease	**16.** 25% increase
5. 50% increase	**11.** 50% increase	**17.** 25% decrease
6. 25% decrease	**12.** 20% decrease	**18.** 20% decrease

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The amount changes by $25 - 20 = 5$, an increase. Compare it to the original: $\frac{5}{20} = 0.25$, which is a 25% increase. So the final answer is 25% increase.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The value drops by $50 - 40 = 10$. Divide by the original: $\frac{10}{50} = 0.20$, a 20% decrease. So the final answer is 20% decrease.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is $100 - 80 = 20$ up. Over the original: $\frac{20}{80} = 0.25 = 25\%$ increase. So the final answer is 25% increase.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is $60 - 45 = 15$ down. Over the original: $\frac{15}{60} = 0.25 = 25\%$ decrease. So the final answer is 25% decrease.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 5 up. Over the original: $\frac{5}{10} = 0.50 = 50\%$ increase. So the final answer is 50% increase.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 50 down. Over the original: $\frac{50}{200} = 0.25 = 25\%$ decrease. So the final answer is 25% decrease.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 6 up. Over the original: $\frac{6}{30} = 0.20 = 20\%$ increase. So the final answer is 20% increase.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 18 down. Over the original: $\frac{18}{90} = 0.20 = 20\%$ decrease. So the final answer is 20% decrease.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 5 up. Over the original: $\frac{5}{25} = 0.20 = 20\%$ increase. So the final answer is 20% increase.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 30 down. Over the original: $\frac{30}{120} = 0.25 = 25\%$ decrease. So the final answer is 25% decrease.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 20 up. Over the original: $\frac{20}{40} = 0.50 = 50\%$ increase. So the final answer is 50% increase.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 15 down. Over the original: $\frac{15}{75} = 0.20 = 20\%$ decrease. So the final answer is 20% decrease.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 2 up. Over the original: $\frac{2}{8} = 0.25 = 25\%$ increase. So the final answer is 25% increase.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The change is 15 down. Over the original: $\frac{15}{50} = 0.30 = 30\%$ decrease. So the final answer is 30% decrease.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The price went up by $30 - 25 = 5$. Over the original price: $\frac{5}{25} = 0.20 = 20\%$ increase. So the final answer is 20% increase.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Growth is $1000 - 800 = 200$. Over the original population: $\frac{200}{800} = 0.25 = 25\%$ increase. So the final answer is 25% increase.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The price dropped by $80 - 60 = 20$. Over the original: $\frac{20}{80} = 0.25 = 25\%$ decrease. So the final answer is 25% decrease.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Weight fell by $150 - 120 = 30$. Over the original: $\frac{30}{150} = 0.20 = 20\%$ decrease. So the final answer is 20% decrease.

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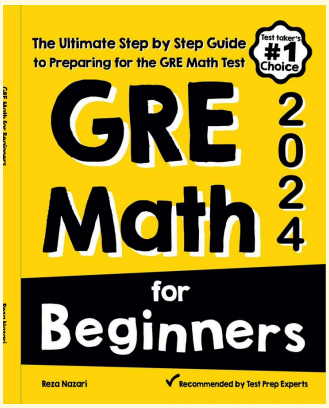

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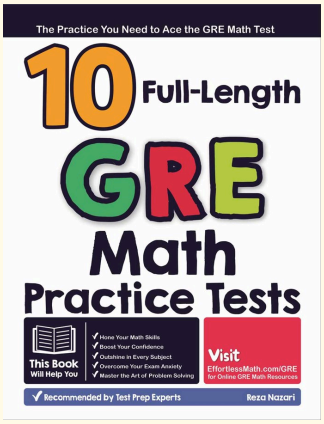

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