

Increasing and Decreasing by a Percentage



Use the diagram to find the missing new amount, then answer without a diagram.

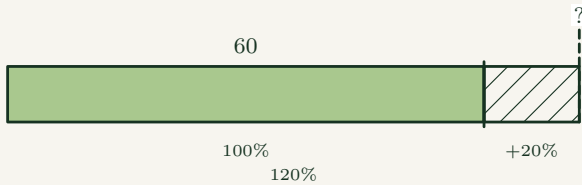
Name _____

Date _____

Show your method

To increase, multiply by $(1 + \text{the rate as a decimal})$. To decrease, multiply by $(1 - \text{the rate as a decimal})$.

Worked example Increase 60 by 20%.

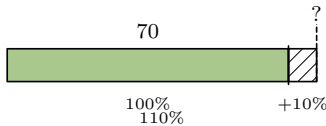


Multiplier: $1 + 0.2 = 1.2$

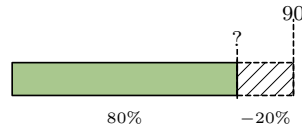
Multiply: $60 \times 1.2 = 72$

So 60 increased by 20% is 72.

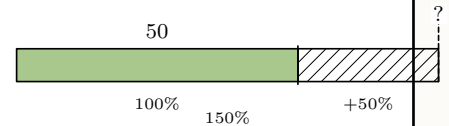
1. Find the missing new amount marked ?.



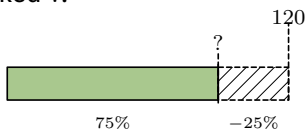
2. Find the missing new amount marked ?.



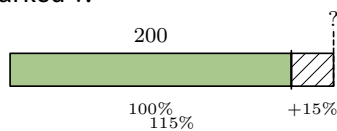
3. Find the missing new amount marked ?.



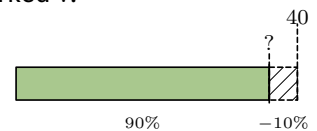
4. Find the missing new amount marked ?.



5. Find the missing new amount marked ?.



6. Find the missing new amount marked ?.



7. Increase 80 by 25%.

8. Decrease 150 by 10%.

9. Increase 32 by 75%.

Increasing and Decreasing by a Percentage (continued)

Apply the method to money contexts.



Name _____

Date _____

10. Decrease 60 by 15%.

11. Increase 45 by 20%.

12. Decrease 250 by 12%.

13. A \$55 item is discounted by 20%. Find the sale price.

14. A \$45 bill has 15% GST added. Find the new total.

15. A population of 400 falls by 5%. Find the new population.

16. A \$140 tool is marked up by 30%. Find the new price.

17. A car worth \$16 000 depreciates by 8% in one year. Find its new value.

18. A \$50 item is increased by 10%, then the new price is decreased by 10%. Find the final price.
