Reverse Percentages

*Reverse percentages are used to find the **original amount** before a percentage change occurred. The key is to identify what percentage the new amount represents.*

After a **10% increase**, the new amount is **110%** of the original.
After a **25% decrease**, the new amount is **75%** of the original.
Example: A price is increased by 20% to $60. To find the original price:
$60 represents 120%.
Find 1%: $60 \div 120 = 0.5$.
Find 100% (the original): $0.5 \times 100 = \$50$.
Part A: Skill Practice
1. After a 10% increase, a number is 88. What was the original number?

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2. After a 25% decrease, a number is 60. What was the original number?

3. A number is increased by 40% to become 168. Find the original number.

4. A number is decreased by 30% to become 140. Find the original number.

5. After a 5% increase, an amount is $420. What was the original amount?

6. After a 2% decrease, an amount is $196. What was the original amount?

7. A number is increased by 150% to become 250. What was the original number?

Part B: Contextual Problems

8. A television is in a "20% off" sale and its sale price is $960. What was the original price of the television?

9. The price of a laptop, including 15% GST, is $1,380. What was the price of the laptop *before* GST was added?

10. A special offer cereal box is marked "30% Extra Free!" and now weighs 780g. What was the original weight of the cereal?

11. After a period of growth, a company's workforce increased by 5% to 441 employees. How many employees did the company have before the increase?

12. A car's value depreciated by 20% during the first year. If its value is now $24,000, what was the car's original price when new?