

## Percentages

### Notes

Percent change formula

### What's your opinion?

A) Does increasing a number by 10% then by 20% the same as increasing it by 30%?

Yes    No

B) Given a square, if we increase one side by 10% and decrease the other side by 10%, will the area stay the same?

Yes    No

C) The price of Don's stock investment dropped 40% and he is sad. I want to comfort him by saying "Don't worry Don, you just need to wait for it to grow by 40% then you won't be losing money anymore!" Am I correct?

Yes    No

**Discussion questions**

1. John spent 40% of his allowance on candy, and then gave 30% of the remainder to his sister. How much of his allowance is left?
  
  
  
  
  
  
  
  
  
  
2. The length of a rectangle is 20% more than the side of a square and its width is 20% less than the side of the square. What is the ratio of the area of the rectangle to that of the square?
  
  
  
  
  
  
  
  
  
  
3. Lynne is currently 100% older than her younger sister Sylvie. In 8 years, she will be only 20% older. How old is Sylvie now?
  
  
  
  
  
  
  
  
  
  
4. When water freezes, the ice occupies a volume 9% greater than that of the water. How much water must be frozen to make  $872 \text{ m}^3$  of ice?

5. When 5 new girls joined a class, the percentage of girl increased from 40% to 50%. How many boys are in the class?

6. My height has been growing at a rate of 20% per year. By how much did I grow in two years?

### **Practice questions**

1. Melissa wishes to sell her bicycle. Three years ago, she paid \$140 for the bicycle. She will sell it by taking a loss of 35%. What will the selling price be?

2. A basketball team has won 30 games of 40 played. How many of the remaining 30 games must it win to have an 80%-win record for the season?

3. A number is 16% of its own reciprocal, what is that number?