

## Rates and Gradients

1. Write the equation for a gradient
2. Write the equation for a rate
3. If a mountain grows at a rate of 400 cm in 100 years, what is its growth rate per year?
4. Niagara Falls is worn down by 900 cm in a month. What is its erosion rate per day (assume a month is 30 days long)?
5. A hiker gains 250 meters in altitude by climbing a mountain from the valley. The peak is 5 km from the valley. What is the gradient of the mountain side?
6. The temperature from one side of a classroom is 27C while on the other it is 19C. The distance between the two thermometers is 16 meters. What is the temperature gradient?
7. Two cities are separated by a distance of 500km. In one city, the barometric pressure (air pressure) is 990mb, while the other city measures 1040mb. What is the pressure gradient?