



# AUSTRALIAN MATHS TRUST

AMC Challenge  
Senior: Years 11–12  
Practice Problem

## S1: Percentages

The base of a triangle is increased by 25% and its height is increased by 50%. Its area has increased by

- a.** 25%      **b.** 50%      **c.** 66.6%      **d.** 75%      **e.** 87.5%

## Solutions

Consider the formula  $A = \frac{1}{2}bh$ . As the triangle is enlarged,  $b$  is multiplied by  $\frac{5}{4}$  and  $h$  is multiplied by  $\frac{3}{2}$ . In total,  $A$  is multiplied  $\frac{5}{4} \times \frac{3}{2} = \frac{15}{8} = 1.875$ , which gives an increase of 87.5%, hence (E).