Pure Mathematics

Answers - Modelling with Quadratics

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1 a The height of the bridge above water level
   b $x = 1103$ and $x = -1103$
   c 2206 m
2 a 21.8 mph and 75.7 mph
   b $A = 39.77$, $B = 0.01$, $C = 48.75$
   c 48.75 mph
   d −11 mpg; a negative answer is impossible so this
      model is not valid for very high speeds
3 a 6 tonnes
   b 39.6 kilograms per hectare.
4 a $M = 40\,000$
   b $r = 400\,000 - 1000(p - 20)^2$
      $A = 400\,000$, $B = 1000$, $C = 20$
   c £20