

## Quadratics - Exercises (1 page; 21/3/20)

### Key to difficulty:

\* easier

\*\* moderate

\*\*\* harder

(1\*\*) Factorise  $15x^2 + 34x + 16$

(2\*\*) Derive the quadratic formula for the equation

$ax^2 + bx + c = 0$ , by completing the square

(3\*) Find the turning points of the following quadratic functions  
(without differentiating)

(i)  $y = x^2 + x - 2$

(ii)  $s = 10t - 5t^2$

(iii)  $s = 1 + 10t - 5t^2$

(4\*\*) For what value of  $x$  does  $(x + 2)(x + 4)$  have its minimum value?

(5\*\*) How to find  $k$  if  $y = kx + 1$  touches  $y = x^2 + 2x + 3$ ?

(6\*\*) Give an example of a quadratic equation that has no real roots.