

By substitution method, we eliminate t,

$$Y = -10(X/20)^2 + 30(X/20) + 10 = -(1/40)X^2 + (3/2)X + 10$$

Using quadratic equation,

$$\begin{aligned} X_1, X_2 &= (3/2)/(1/20) \pm \sqrt{((3/2)^2 + 1)/(-1/20)} \\ &= 30 \pm 36.1 \rightarrow 66.1 \text{ m} \end{aligned}$$

The distance is 66.1 m when the ball hits the ground.

$$(X + 2)^2 = X^2 + 4X + 4$$

$$(X - 3)^2 = X^2 - 6X + 9$$

$$(X+2)(X+3) = X^2 + 5X + 6$$

$$X^2 + 10X + 25 = (X + 5)^2$$

$$X^2 - 14X + 49 = (X - 7)^2$$

$$X^2 + 9X + 20 = (X+4)(X+5)$$

$$X^2 + X - 14 = (X+7)(X-2)$$

**Write XX for  $X^2$  in the next section**

(1)  $13 \times 15 = (14-1)(14+1) = 14^2 - 1$

$14^2 = (10+4)^2 = 100+80+16 = 196$  Therefore,  $13 \times 15 = 195$

(2)  $18 \times 12 = (15+3)(15-3) = 15^2 - 3^2 = 225 - 9 = 216$

(3)  $27 \times 17 = (20+7)(10+7) = 200 + 70 + 140 + 49 = 459$