

### Solution to JiTT 1:

Q1 The expression  $(Ax^2 - 1)$  cannot be factorised using the difference of 2 squares formula unless  $A$  is a perfect square, i.e 1, 4, 9, 16....

Example 1:

$$\begin{aligned}16x^2 - 1 \\ &= (4x)^2 - 1^2 \\ &= (4x+1)(4x-1)\end{aligned}$$

Example 2:

$$\begin{aligned}\frac{9}{4}x^2 - 1 \\ &= \left(\frac{3}{2}x\right)^2 - 1^2 \\ &= \left(\frac{3}{2}x+1\right)\left(\frac{3}{2}x-1\right)\end{aligned}$$

Examples of expressions that cannot be factorised using this method:

$3x^2 - 1$ ,  $7x^2 - 1$ ,  $\pi x^2 - 1$  etc.

Q2 Using the hint, let  $x = 112233445566778899$

$\therefore x^2 = 112233445566778899^2$  and

$(x-1) = 112233445566778898$ ,  $(x+1) = 112233445566778900$

$$(x-1)(x+1) = x^2 - 1$$

Therefore,  $112233445566778899^2$  is larger.