Lycée Des Arts
Hadat: Rue de Jamousee

Mark/ La note

Test in/ Examen de : .....

Time / La durée : .....

Name/Le nom : .....

Class/ La Classe: .....

Date / La date: .....

1st exercise:

1) $A = \sqrt{\frac{9^8 - 3^6}{9^2 - 3^4}} = \sqrt{\frac{3^{16} - 3^6}{3^{14} - 3^4}} = \sqrt{\frac{3^6(3^{10} - 1)}{3^4(3^{10} - 1)}} = \sqrt{3^2}$

Thus, $A = 3$ True

2) To determine the relative position of a circle & a st. line, we have to compare its radius with the perp. distance from the center to st. line.

$r = \frac{(2\sqrt{3} + 3\sqrt{2})(\sqrt{3} - \sqrt{2})}{(\sqrt{3} + \sqrt{2})(\sqrt{3} - \sqrt{2})} = \frac{6 - 2\sqrt{6} + 3\sqrt{6} - 6}{3 - 2}$

$r = \frac{\sqrt{6}}{1} = \sqrt{6}$ cm

but distance $= \sqrt{6}$

So, $r = d$.

Thus, (d) is tangent to (C)

False.

3) $x\sqrt{2} = \sqrt{2} + 2$

then $x = \frac{(\sqrt{2} + 2)\sqrt{2}}{(\sqrt{2})(\sqrt{2})}$ $x = \frac{2 + 2\sqrt{2}}{2}$ $x = 2\left(\frac{1 + \sqrt{2}}{2}\right)$

Thus, $x = 1 + \sqrt{2}$

False

4) The third of $3^{90} = \frac{3^{90}}{3} = 3^{89}$ False

5) $P(x) = (2mx - 3)(x + 1) - (x - 3)(x + m)$

To find the degree of $P(x)$, it should be expanded & reduced

$P(x) = 2mx^2 + 2mx - 3x - 3 - x^2 + mx + 3x + 3m$

$= (2m - 1)x^2 + mx + 3m - 3$.