



نتمقق مدلت

$$(x+4)^2 + (y-1)^2 = 81$$

$$(x-a)^2 + (y-b)^2 = r^2$$

$$\sqrt{r^2} = \sqrt{81}$$

$$r = 9$$

$$\begin{matrix} a & b \\ (-4 & 1) \end{matrix} \text{ المركز}$$

$$\begin{matrix} x_1 & y_1 \\ (-4 & 1) \end{matrix} \quad \begin{matrix} x_2 & y_2 \\ (7 & 4) \end{matrix}$$

$$(XP)^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$$

$$(XP)^2 = (7 - (-4))^2 + (4 - 1)^2$$

$$(XP)^2 = (11)^2 + (3)^2$$

$$(XP)^2 = 121 + 9$$

$$\sqrt{(XP)^2} = \sqrt{130} \quad XP = \sqrt{130}$$

$$(XP)^2 = (XT)^2 + (TP)^2$$

$$\frac{130}{-81} = \frac{81}{-81} + TP^2$$

$$\sqrt{(TP)^2} = \sqrt{49}$$

$$TP = 7$$

مثال جديد

$$(x-10)^2 + (y-8)^2 = 45 \quad \text{المعادلة التي تعادلها}$$

$$(x-10)^2 + (2x+3-8)^2 = 45$$

أثبت ان المستقيم

$$(x-10)^2 + (2x-5)^2 = 45$$

$$x^2 - 20x + 100 + 4x^2 - 20x + 25 - 45 = 0$$

$$5x^2 - 40x + 100 + 25 - 45 = 0$$

$$y = 2x + 3$$

$$\frac{5x^2}{5} - \frac{40x}{5} + \frac{80}{5} = 0$$

$$y = 2(4) + 3$$

$$y = 8 + 3$$

$$x^2 - 8x + 16 = 0$$

$$y = 11$$

$$(x-4) (x-4)$$

$$(4, 11)$$

$$x = 4$$

المسألة 68

أثبت أن المستقيم $y = 4x - 5$ هو مماس الدائرة التي مركزها $(-5, 9)$ ونصف قطرها 68

$$(x+5)^2 + (4x-5-9)^2 = 68$$

$$(x+5)^2 + (4x-14)^2 = 68$$

$$x^2 + 10x + 25 + 16x^2 - 112x + 196 - 68 = 0$$

$$17x^2 - 102x + 216 = 0$$

$$\frac{17x^2}{17} - \frac{102x}{17} + \frac{216}{17} = 0$$

$$x^2 - 6x + 12 = 0$$

$$(x-3) (x-3)$$

$$y = 4x - 5$$

$$x - 3 = 0$$

$$x = 3$$

$$x = 3$$

$$y = 4(3) - 5$$

$$y = 12 - 5$$

$$y = 7$$

$$(3, 7)$$

$$x, y$$