

3.50 (16) אמצע (קו) צירי ה- x ו- y של המעגל $x^2 + y^2 = 1$ הוא $(0,0)$.

$\Delta = 0$

$$\frac{x^2}{a^2} + \frac{(mx+n)^2}{b^2} = 1$$

$$x^2 b^2 + a^2 (m^2 x^2 + 2mxn + n^2) = b^2 a^2$$

$$x^2 (b^2 + a^2 m^2) + 2mxna^2 + a^2 n^2 - a^2 b^2 = 0$$

$\Delta = 0$

$$4m^2 n^2 a^4 - 4(b^2 + a^2 m^2)(a^2 n^2 - a^2 b^2) < 0$$

$$4m^2 n^2 a^4 - 4b^2 a^2 n^2 + 4a^2 b^4 - 4a^4 m^2 n^2 + 4a^4 m^2 b^2 = 0 \quad /: 4a^2 b^2$$

$$\boxed{a^2 m^2 + b^2 = n^2}$$

(2)

$y = mx + n$ ישר

אנך ל- AC ו- BC

(1) A ו- B ישר

$$1 = \frac{|-n|}{\sqrt{1+m^2}}$$

$$0.8 = \frac{|-m+1-n|}{\sqrt{1+m^2}}$$

$$|-n| = \frac{5}{4} | -m+1-n |$$

$$n = -\frac{5}{4}m + \frac{5}{4} - \frac{5}{4}n$$

$$-n = -\frac{5}{4}m + \frac{5}{4} - \frac{5}{4}n$$

$$2\frac{1}{4}n = -\frac{5}{4}m + \frac{5}{4}$$

$$\frac{1}{4}n = -\frac{5}{4}m + \frac{5}{4}$$

$$\boxed{9n = -5m + 5}$$

$$\boxed{n = -5m + 5}$$

המשוואה של המעגל

$$1+m^2 = n^2$$

$$\swarrow -5m+5$$

$$2(1+m^2) = (-5m+5)^2$$

$$56m^2 + 50m + 56 = 0$$

$$1+m^2 = 25m^2 - 50m + 25$$

$$0 = 24m^2 - 50m + 24$$

$$m_1 = \frac{1}{3} \rightarrow y = \frac{1}{3}x + \frac{2}{3}$$

$$m_2 = \frac{3}{4} \rightarrow y = \frac{3}{4}x + \frac{1}{4}$$