

e_01_05_011_S

$$|\vec{a}| = |\vec{b}| = 12.7$$

$$\theta_a = 28.2^\circ$$

$$\theta_b = 133.2$$

∴ ארכות קצרות יותר מהארכות הארוכות יותר

$$a_x = |\vec{a}| \cos \theta_a = 12.7 \cos 28.2 = 11.2$$

$$a_y = |\vec{a}| \sin \theta_a = 12.7 \sin 28.2 = 6$$

$$\Rightarrow \vec{a} = (11.2, 6)$$

$$b_x = |\vec{b}| \cos \theta_b = 12.7 \cos 133.2 = -8.7$$

$$b_y = |\vec{b}| \sin \theta_b = 12.7 \sin 133.2 = 9.25$$

$$\Rightarrow \vec{b} = (-8.7, 9.25)$$

$$\vec{r} = (a_x + b_x, a_y + b_y) = (-2.5, 15.25)$$

$$|\vec{r}| = \sqrt{r_x^2 + r_y^2} = \sqrt{2.5^2 + 15.25^2}$$

$$|\vec{r}| = 15.45$$

$$|\vec{r}| = ? \quad (c)$$

$$\tan \theta_r = \frac{r_y}{r_x} = \frac{15.25}{2.5} = 6.1$$

$$\theta_r = ? \quad (c)$$

$$\Rightarrow \theta_r = \tan^{-1} 6.1 = 80.7^\circ$$