Answer on question #34607 – Math – Trigonometry

Which function represents the polar form of 3y^2=5x-3x^2?

A. r=5/3sina

B. r=3/5cosa

C. r=3/5sina

D. r=5/3cosa

Solution

The polar coordinates *r* and *φ* can be converted to the Cartesian coordinates *x* and *y* by using the trigonometric functions sine and cosine:

$$x = r\cos\varphi$$
$$y = r\sin\varphi$$

Substitute these into our equation

$$3r^2\sin^2\varphi = 5r\cos\varphi - 3r^2\cos^2\varphi$$

$$3r^2 = 5r\cos\varphi$$

$$r = \frac{5}{3}\cos\varphi$$

Answer: D.