

Guest Student

WeBWorK assignment 16_PolarCoords

Math 141 Spring 2006**Due: 03/27/2006 at 11:00pm EST**

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1. (1 pt) A curve with polar equation

$$r = \frac{26}{3 \sin \theta + 22 \cos \theta}$$

represents a line. This line has a Cartesian equation of the form $y = mx + b$, where m and b are constants. Give the formula for y in terms of x . For example, if the line had equation $y = 2x + 3$ then the answer would be $2 * x + 3$.

2. (1 pt) Find the area of the region bounded by the curve $r = 5e^{4\theta}$ on the interval $\frac{6}{3}\pi \leq \theta \leq 2\pi$.
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3. (1 pt) Find the area of the region bounded by the curve $r = 7 \cos 8\theta$
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4. (1 pt)

Find the area of the region outside $r = 10 + 10 \sin \theta$, but inside $r = 30 \sin \theta$.

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5. (1 pt) Find the exact length of the polar curve described by:

$$r = 10e^{-2\theta}$$

on the interval $\frac{1}{4}\pi \leq \theta \leq 7\pi$.

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6. (1 pt) Find the length of the entire perimeter of the region inside $r = 5 \sin \theta$ but outside $r = 3$.
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