

Watch. Practice. Understand. | Lesson 250

The Secret Beauty of Parametric Equations Pre Calculus 10.7

Watch the matching video: <https://www.youtube.com/watch?v=IsuqsPfd3RA>

Practice focus: Parametric equations

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Eliminate t from $x = t + 1$, $y = t^2$ for all real t .

02 For $x = 2\cos t$, $y = 2\sin t$, identify the curve and direction as t increases from 0.

03 For $x = t^2$, $y = t + 1$ with $t \geq 0$, eliminate t and state the restriction.

04 For $x = 3t - 2$, $y = 4t + 1$, find the point at $t = 2$.

Worked answers | Lesson 250

The Secret Beauty of Parametric Equations Pre Calculus 10.7

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Practice focus: Parametric equations

Original extra practice matched to the listed lesson topic.

01 Eliminate t from $x = t + 1$, $y = t^2$ for all real t .

$$t = x - 1 \text{ gives } y = (x - 1)^2.$$

02 For $x = 2\cos t$, $y = 2\sin t$, identify the curve and direction as t increases from 0.

$$x^2 + y^2 = 4; \text{ circle of radius 2 traced counterclockwise from } (2,0).$$

03 For $x = t^2$, $y = t + 1$ with $t \geq 0$, eliminate t and state the restriction.

$$t = y - 1 \geq 0. \ x = (y - 1)^2, \ y \geq 1, \text{ equivalently } y = 1 + \sqrt{x} \text{ for } x \geq 0.$$

04 For $x = 3t - 2$, $y = 4t + 1$, find the point at $t = 2$.

$$\text{Substitute: } x = 4 \text{ and } y = 9, \text{ so the point is } (4,9).$$