

Watch. Practice. Understand. | Lesson 303

Calculus Section 6.1 Area Between Two Curves

Watch the matching video: <https://www.youtube.com/watch?v=2g1i76UHvsA>

Practice focus: Area between curves

Original extra practice matched to the listed lesson topic.

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

01 Find area between $y=x$ and $y=x^2$ on $[0,1]$.

02 Find area enclosed by $y=4-x^2$ and $y=0$.

03 Find area between $y=x$ and $y=-x$ on $[-1,1]$.

04 Find intersections and enclosed area of $y=x^2$ and $y=2x+3$.

Worked answers | Lesson 303

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01 Find area between $y=x$ and $y=x^2$ on $[0,1]$.

Upper minus lower: $\int_0^1 (x-x^2) dx = 1/2 - 1/3 = 1/6$.

02 Find area enclosed by $y=4-x^2$ and $y=0$.

Intersections $x=\pm 2$. $\int_{-2}^2 (4-x^2) dx = 32/3$.

03 Find area between $y=x$ and $y=-x$ on $[-1,1]$.

Upper curve switches at 0. $\int_{-1}^1 2|x| dx = 2$.

04 Find intersections and enclosed area of $y=x^2$ and $y=2x+3$.

Intersections $x=-1, 3$. $\int_{-1}^3 (2x+3-x^2) dx = 32/3$.