

Calculus Section 6.1 Area Between Two Curves

Lesson 303 | Calculus AB | Area between curves

<https://www.youtube.com/watch?v=2g1i76UHvsA>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Find the area between $y=20x$ and $y=x^2$ from $x=0$ to their other intersection.

02

Find the area between $y=15x$ and $y=x^2$ from $x=0$ to their other intersection.

03

Find the area between $y=17x$ and $y=x^2$ from $x=0$ to their other intersection.

Calculus Section 6.1 Area Between Two Curves

Lesson 303 | Calculus AB | Area between curves

<https://www.youtube.com/watch?v=2g1i76UHvsA>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

04

Find the area between $y=16x$ and $y=x^2$ from $x=0$ to their other intersection.

05

Find the area between $y=14x$ and $y=x^2$ from $x=0$ to their other intersection.

06

Find the area between $y=10x$ and $y=x^2$ from $x=0$ to their other intersection.

Calculus Section 6.1 Area Between Two Curves

Lesson 303 | Calculus AB | Area between curves

<https://www.youtube.com/watch?v=2g1i76UHvsA>

Original practice aligned to the saved video title.

01

Find the area between $y=20x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-20)=0$, so $x=0,20$. Line is above parabola there.

$$A = \int_0^{20} (20x - x^2) dx = \left[20x^2/2 - x^3/3 \right]_0^{20} = 4000/3.$$

02

Find the area between $y=15x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-15)=0$, so $x=0,15$. Line is above parabola there.

$$A = \int_0^{15} (15x - x^2) dx = \left[15x^2/2 - x^3/3 \right]_0^{15} = 1125/2.$$

03

Find the area between $y=17x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-17)=0$, so $x=0,17$. Line is above parabola there.

$$A = \int_0^{17} (17x - x^2) dx = \left[17x^2/2 - x^3/3 \right]_0^{17} = 4913/6.$$

Calculus Section 6.1 Area Between Two Curves

Lesson 303 | Calculus AB | Area between curves

<https://www.youtube.com/watch?v=2g1i76UHvsA>

Original practice aligned to the saved video title.

04

Find the area between $y=16x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-16)=0$, so $x=0,16$. Line is above parabola there.

$$A = \int_0^{16} (16x - x^2) dx = \left[16x^2/2 - x^3/3 \right]_0^{16} = 2048/3.$$

05

Find the area between $y=14x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-14)=0$, so $x=0,14$. Line is above parabola there.

$$A = \int_0^{14} (14x - x^2) dx = \left[14x^2/2 - x^3/3 \right]_0^{14} = 1372/3.$$

06

Find the area between $y=10x$ and $y=x^2$ from $x=0$ to their other intersection.

Intersections solve $x(x-10)=0$, so $x=0,10$. Line is above parabola there.

$$A = \int_0^{10} (10x - x^2) dx = \left[10x^2/2 - x^3/3 \right]_0^{10} = 500/3.$$