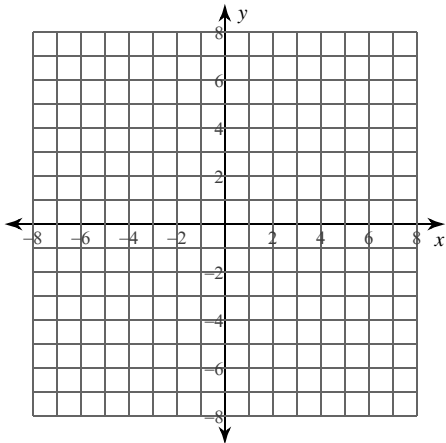


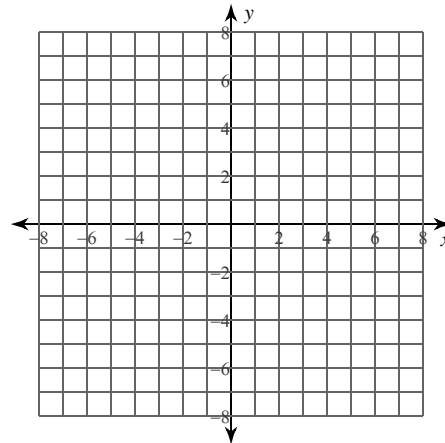
Calculus Practice: Using Definite Integrals to Calculate Area 2b

For each problem, find the area of the region enclosed by the curves. You may use the provided graph to sketch the curves and shade the enclosed region.

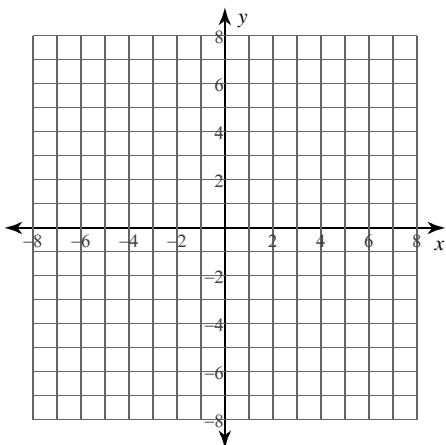
1) $y = x^2 + 4x + 6$, $y = \frac{x^2}{2} + 3x - \frac{1}{2}$,
 $x = -3$, $x = 0$



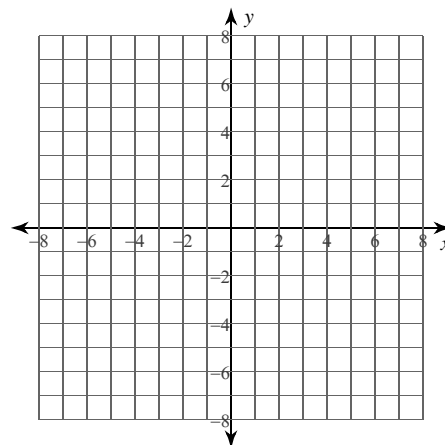
2) $y = \frac{2}{x^2}$, $y = -3$,
 $x = -3$, $x = -1$



3) $y = \sqrt{x}$, $y = 2\sqrt{x}$,
 $x = 0$, $x = 4$

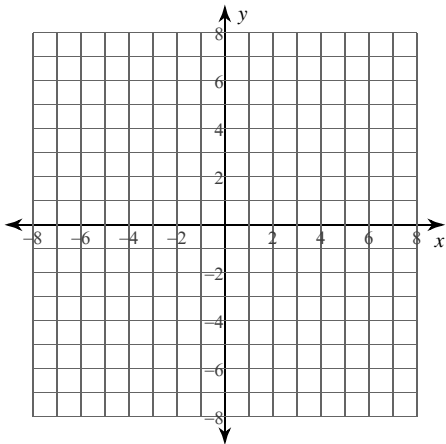


4) $x = -2\sqrt{y}$, $x = \sqrt{y}$,
 $y = 0$, $y = 4$



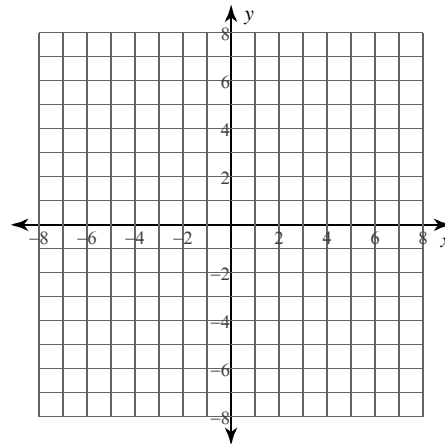
$$5) \ x = \frac{2}{y^2}, \ x = -1,$$

$$y = 2, \ y = 5$$



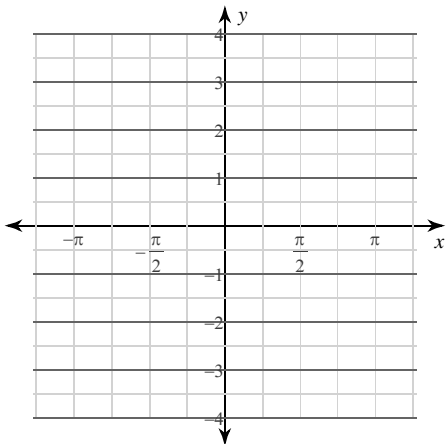
$$6) \ x = \frac{y^2}{2} + y - \frac{11}{2}, \ x = y^2 + 2y - 1,$$

$$y = -3, \ y = 1$$



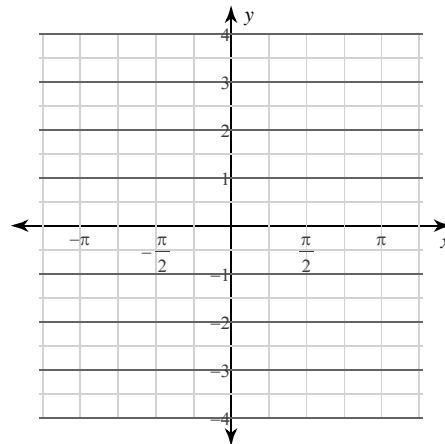
$$7) \ y = 2\sec^2 x, \ y = \cos x,$$

$$x = -\frac{\pi}{4}, \ x = \frac{\pi}{4}$$



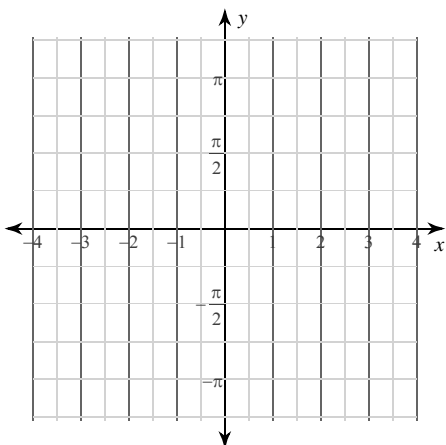
$$8) \ y = -\csc x \cot x, \ y = -2\csc^2 x,$$

$$x = -\frac{2\pi}{3}, \ x = -\frac{\pi}{3}$$



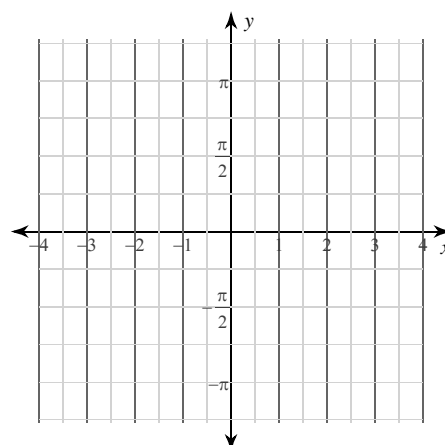
$$9) \ x = 2\cos y, \ x = 2\sin y,$$

$$y = -\frac{\pi}{4}, \ y = \frac{\pi}{4}$$



$$10) \ x = -\sec y \tan y, \ x = -2\sec^2 y,$$

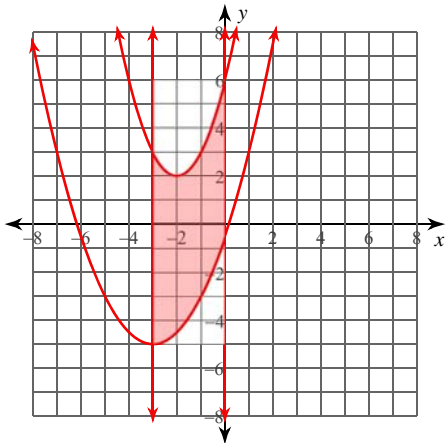
$$y = -\frac{\pi}{6}, \ y = \frac{\pi}{6}$$



Calculus Practice: Using Definite Integrals to Calculate Area 2b

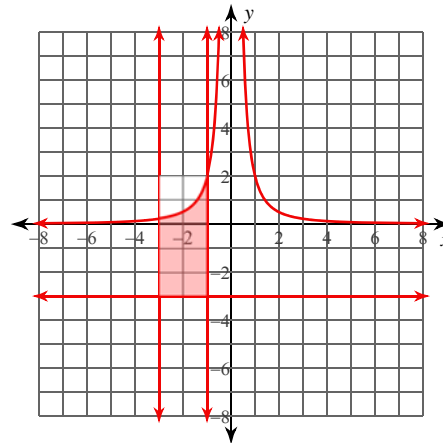
For each problem, find the area of the region enclosed by the curves. You may use the provided graph to sketch the curves and shade the enclosed region.

1) $y = x^2 + 4x + 6$, $y = \frac{x^2}{2} + 3x - \frac{1}{2}$,
 $x = -3$, $x = 0$



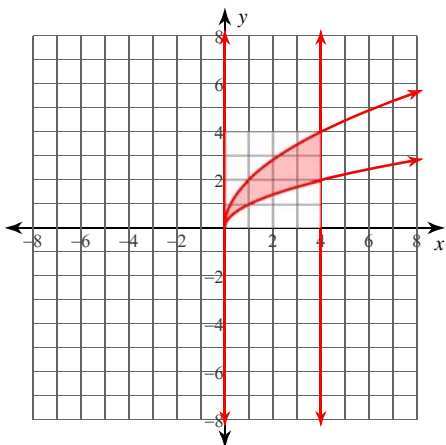
$\frac{39}{2} = 19.5$

2) $y = \frac{2}{x^2}$, $y = -3$,
 $x = -3$, $x = -1$



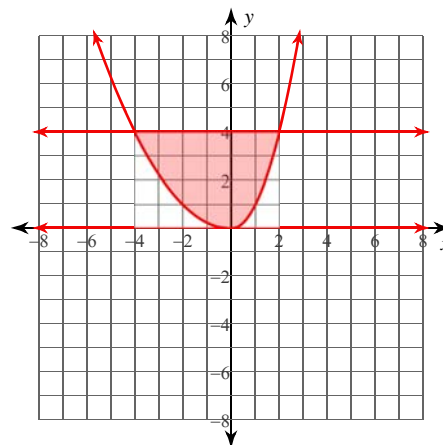
$\frac{22}{3} \approx 7.333$

3) $y = \sqrt{x}$, $y = 2\sqrt{x}$,
 $x = 0$, $x = 4$



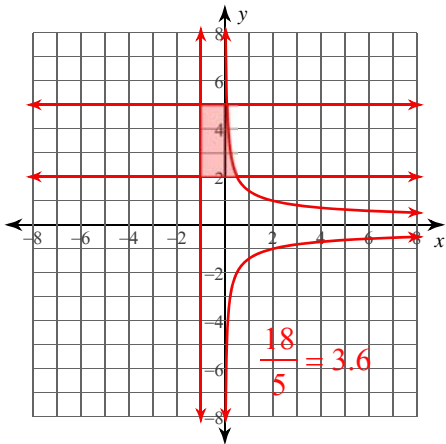
$\frac{16}{3} \approx 5.333$

4) $x = -2\sqrt{y}$, $x = \sqrt{y}$,
 $y = 0$, $y = 4$

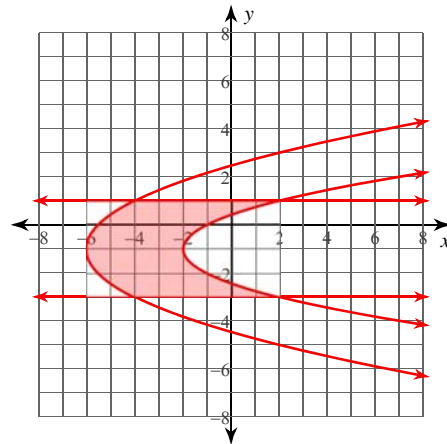


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5) $x = \frac{2}{y^2}$, $x = -1$,
 $y = 2$, $y = 5$

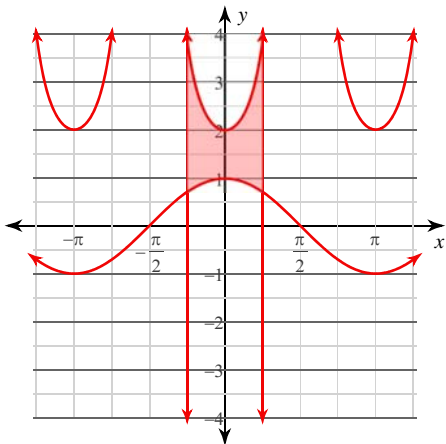


6) $x = \frac{y^2}{2} + y - \frac{11}{2}$, $x = y^2 + 2y - 1$,
 $y = -3$, $y = 1$



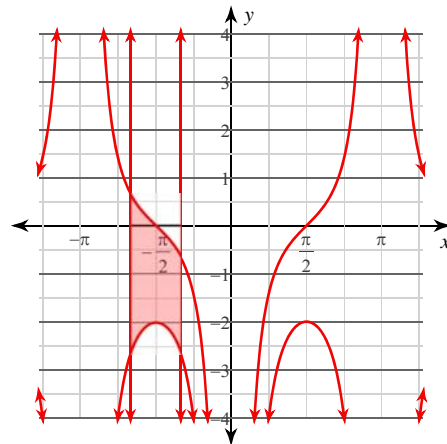
$\frac{56}{3} \approx 18.667$

7) $y = 2\sec^2 x$, $y = \cos x$,
 $x = -\frac{\pi}{4}$, $x = \frac{\pi}{4}$



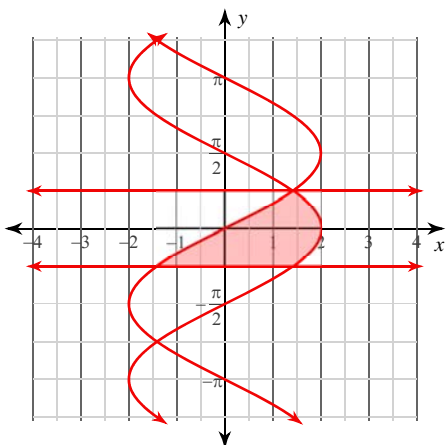
$4 - \sqrt{2} \approx 2.586$

8) $y = -\csc x \cot x$, $y = -2\csc^2 x$,
 $x = -\frac{2\pi}{3}$, $x = -\frac{\pi}{3}$



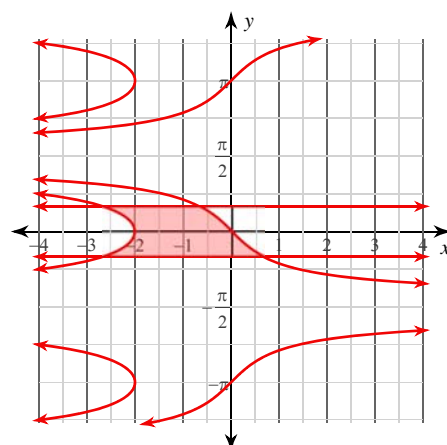
$\frac{4\sqrt{3}}{3} \approx 2.309$

9) $x = 2\cos y$, $x = 2\sin y$,
 $y = -\frac{\pi}{4}$, $y = \frac{\pi}{4}$



$2\sqrt{2} \approx 2.828$

10) $x = -\sec y \tan y$, $x = -2\sec^2 y$,
 $y = -\frac{\pi}{6}$, $y = \frac{\pi}{6}$



$\frac{4\sqrt{3}}{3} \approx 2.309$