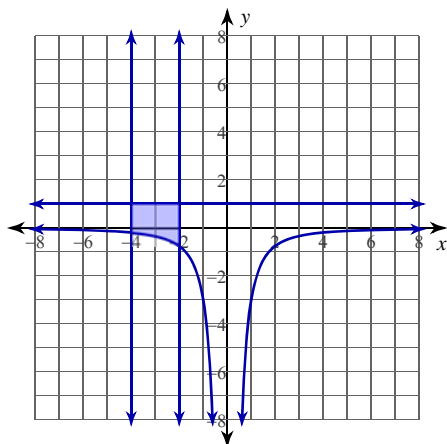


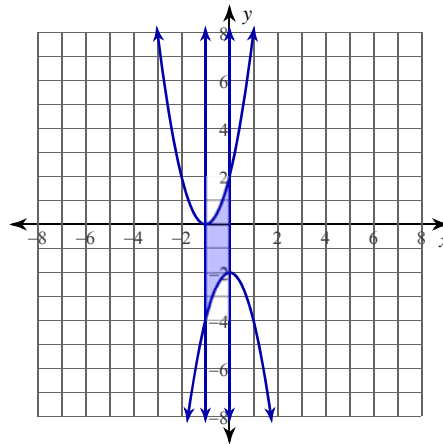
Area between Curve Practice

For each problem, find the area of the region enclosed by the curves.

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

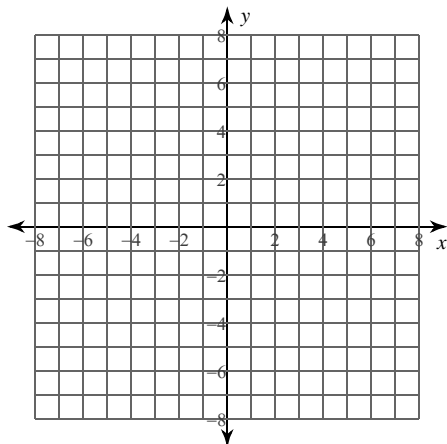


2) $y = 2x^2 + 4x + 2$, $y = -2x^2 - 2$,
 $x = -1$, $x = 0$

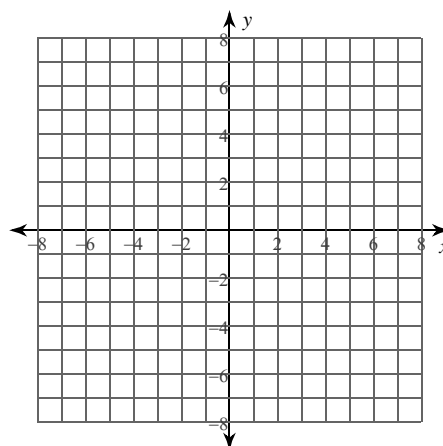


For each problem, find the area of the region enclosed by the curves. You may use the provided graph to sketch the curves and shade the enclosed region.

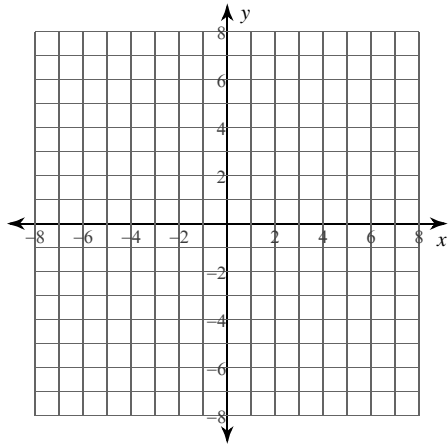
3) $x = y^2 - 4y - 2$, $x = 3$



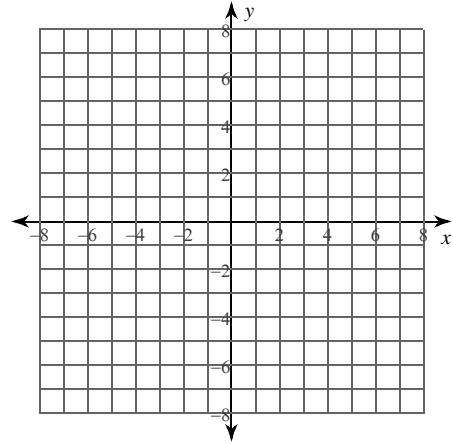
4) $x = \sqrt[3]{y^2}$, $x = \frac{1}{2}y$



5) $y = 2\sqrt{x}$, $y = \frac{x^2}{4}$



6) $x = -\frac{y^3}{2} - \frac{y^2}{2} + \frac{5y}{2}$, $x = -\frac{y}{2}$



Answers to Area between Curve Practice (ID: 1)

$$1) \int_{-4}^{-2} \left(1 + \frac{3}{x^2}\right) dx$$
$$= \frac{11}{4} = 2.75$$

$$2) \int_{-1}^0 (2x^2 + 4x + 2 - (-2x^2 - 2)) dx$$
$$= \frac{10}{3} \approx 3.333$$

$$3) \int_{-1}^5 (3 - (y^2 - 4y - 2)) dy$$
$$= 36$$

$$4) \int_0^8 \left(\sqrt[3]{y^2} - \frac{1}{2}y\right) dy$$
$$= \frac{16}{5} = 3.2$$

$$5) \int_0^4 \left(2\sqrt{x} - \frac{x^2}{4}\right) dx$$
$$= \frac{16}{3} \approx 5.333$$

$$6) \int_{-3}^0 \left(-\frac{y}{2} - \left(-\frac{y^3}{2} - \frac{y^2}{2} + \frac{5y}{2}\right)\right) dy +$$
$$\int_0^2 \left(-\frac{y^3}{2} - \frac{y^2}{2} + \frac{5y}{2} + \frac{y}{2}\right) dy$$
$$= \frac{253}{24} \approx 10.542$$