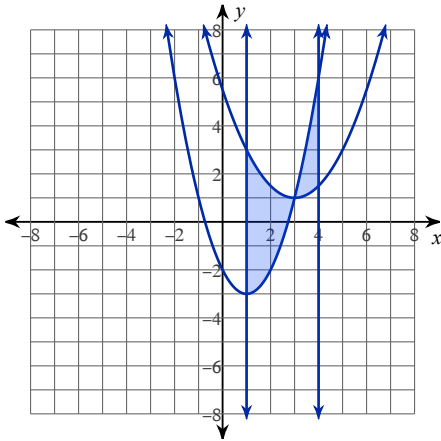


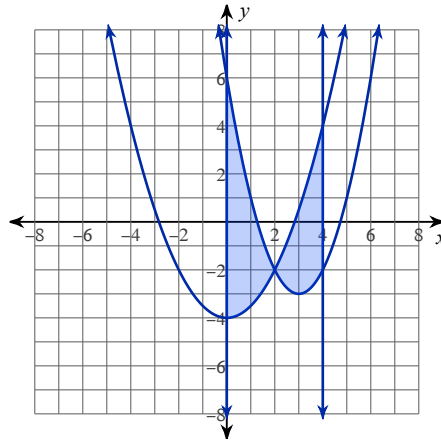
Area Between Curves

For each problem, set up integral(s) that will find the area of the shaded regions. Find the antiderivative by hand, but calculate answers with technology (if desired).

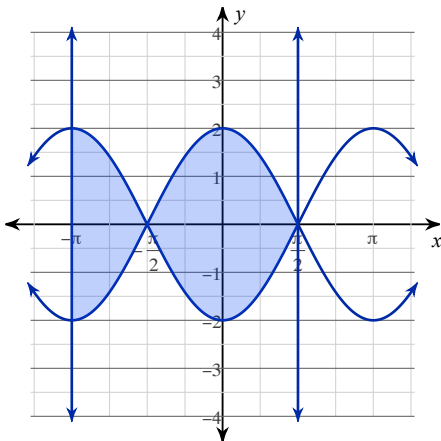
1) $y = \frac{x^2}{2} - 3x + \frac{11}{2}$, $y = x^2 - 2x - 2$,
 $x = 1$, $x = 4$



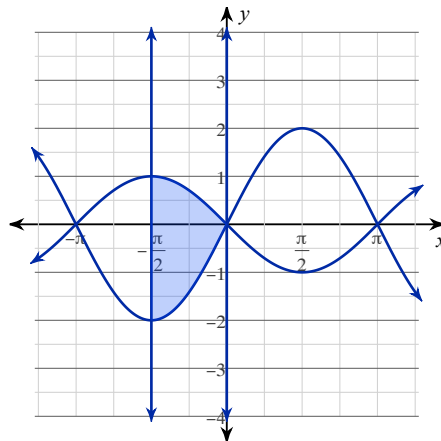
2) $y = \frac{x^2}{2} - 4$, $y = x^2 - 6x + 6$,
 $x = 0$, $x = 4$



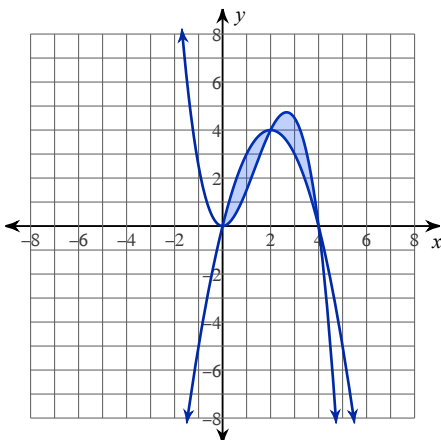
3) $y = -2\cos x$, $y = 2\cos x$,
 $x = -\pi$, $x = \frac{\pi}{2}$



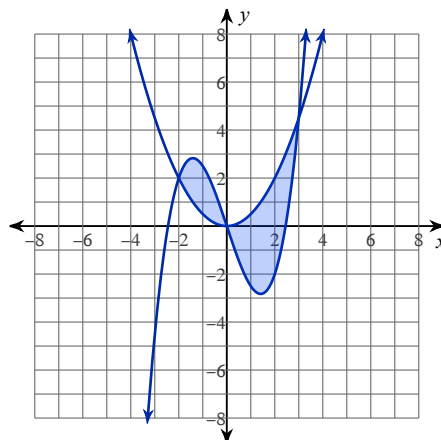
4) $y = -\sin x$, $y = 2\sin x$,
 $x = -\frac{\pi}{2}$, $x = 0$



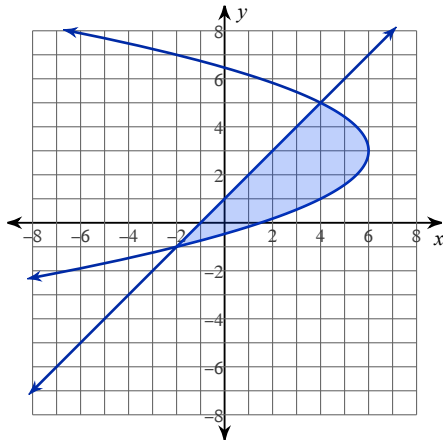
5) $y = -\frac{x^3}{2} + 2x^2$, $y = -x^2 + 4x$



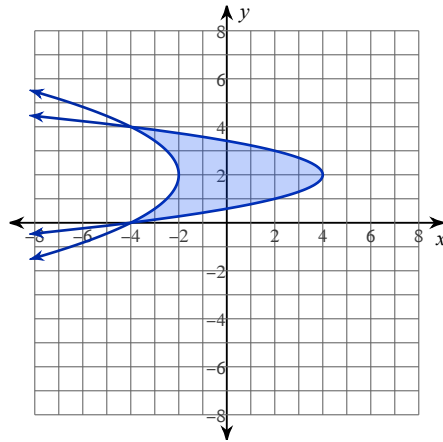
6) $y = \frac{x^3}{2} - 3x$, $y = \frac{x^2}{2}$



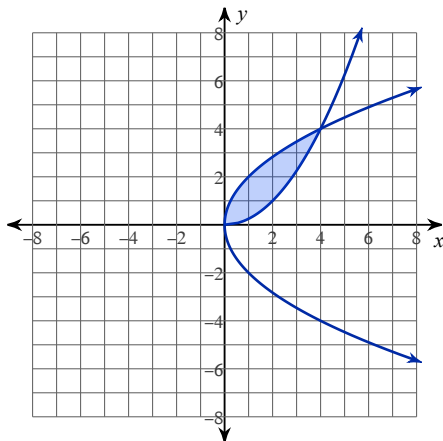
$$7) x = -\frac{y^2}{2} + 3y + \frac{3}{2}, x = y - 1$$



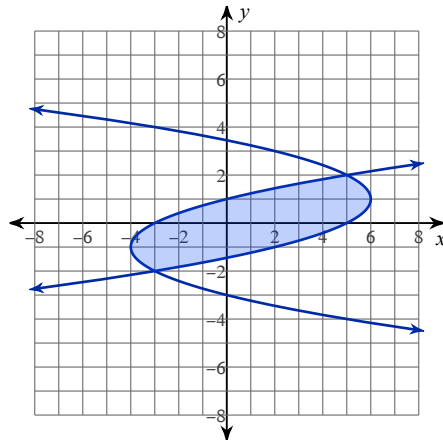
$$8) x = -\frac{y^2}{2} + 2y - 4, x = -2y^2 + 8y - 4$$



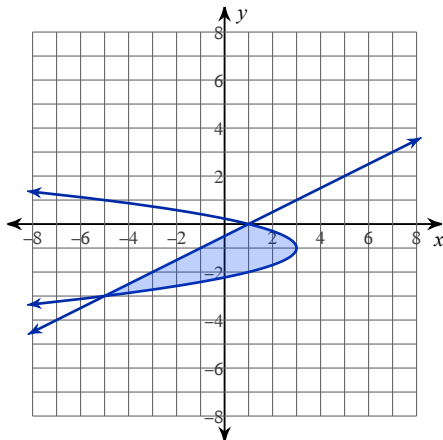
$$9) x = 2\sqrt{y}, x = \frac{y^2}{4}$$



$$10) x = y^2 + 2y - 3, x = -y^2 + 2y + 5$$



$$11) x = -2y^2 - 4y + 1, x = 2y + 1$$



$$12) x = \frac{y^2}{2} - y - \frac{7}{2}, x = -\frac{y^2}{2} - y + \frac{1}{2}$$

