

[1] Write the following in algebraic form.

(a) $\csc\left(\arctan\frac{x}{\sqrt{2}}\right)$

[2] Evaluate each expression without using a calculator.

(a) $\sec\left[\arctan\left(-\frac{3}{5}\right)\right]$

(b) $\tan\left[\arcsin\left(-\frac{5}{6}\right)\right]$

[3] Differentiate the following with respect to x .

(a) $y = 25 \arcsin \frac{x}{5} - x\sqrt{25 - x^2}$

(b) $f(t) = \arcsin t^2$

[4] Find the following Indefinite/Definite Integrals.

(a) $\int \frac{x-1}{\sqrt{x^2-2x}} dx$

$$(b) \int \frac{4x+3}{\sqrt{1-x^2}} dx$$

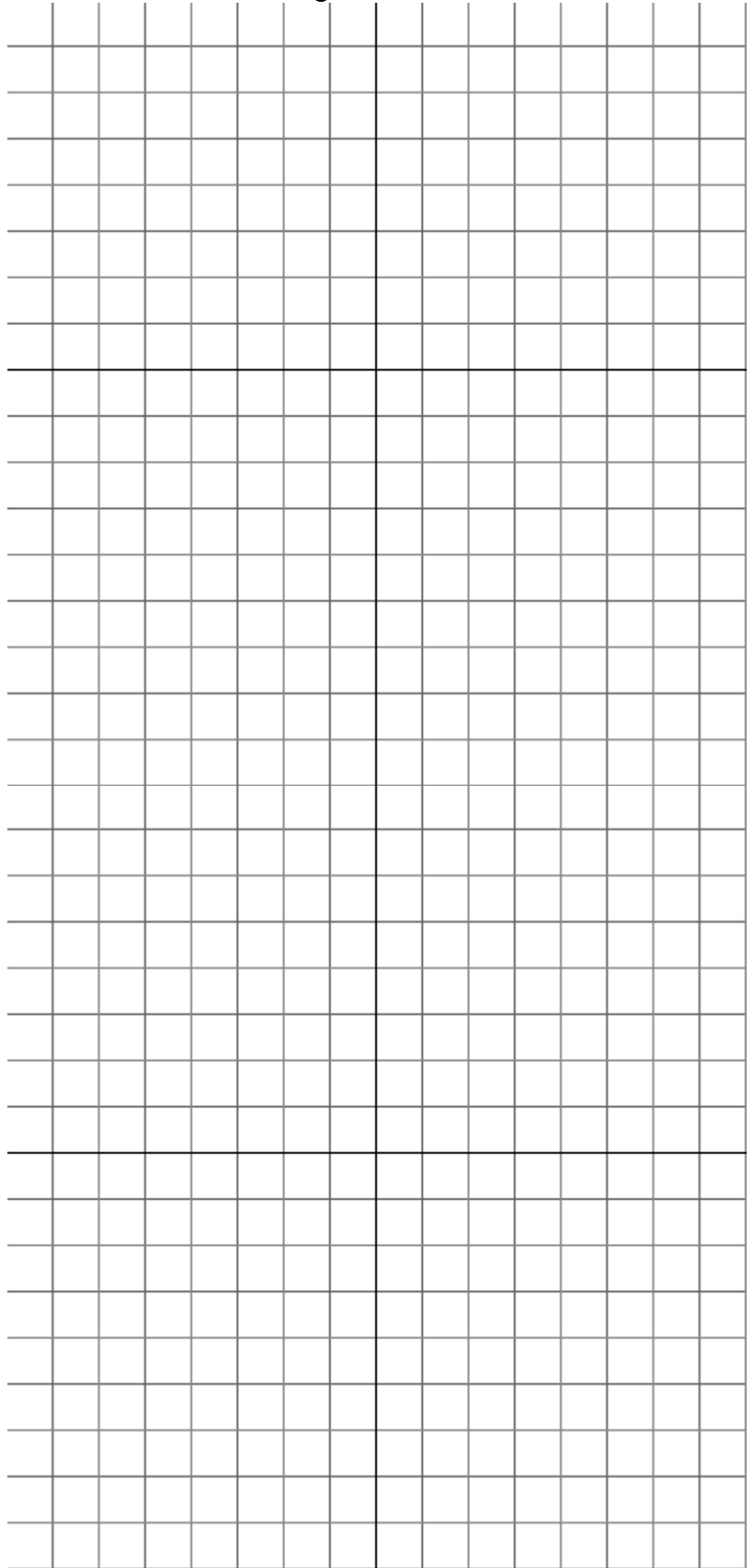
$$(c) \int \frac{dx}{x^2 - 4x + 5}$$

$$(d) \int \frac{4x+5}{x^2-4x+5} dx$$

$$(i) \int \frac{1}{\sqrt{16-6x-x^2}} dx$$

[5] Write a definite integral that represents the Area between the given curves.

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

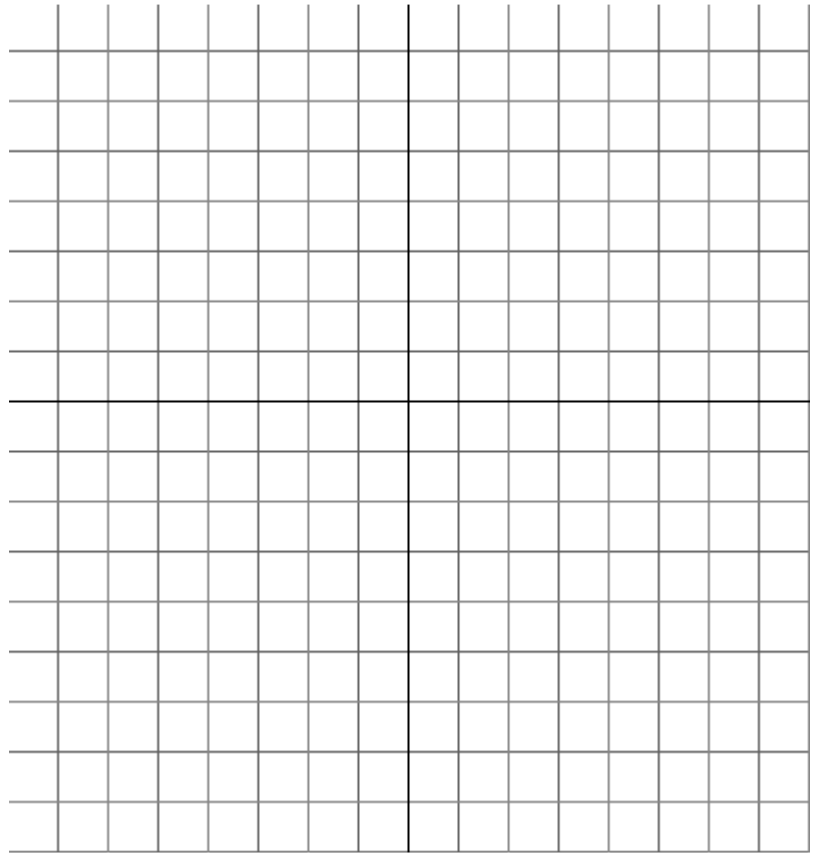


(b) $f(y) = y(2 - y)$, $g(y) = -y$

[6] Write a definite integral that represents the volume of the solid that results when the region

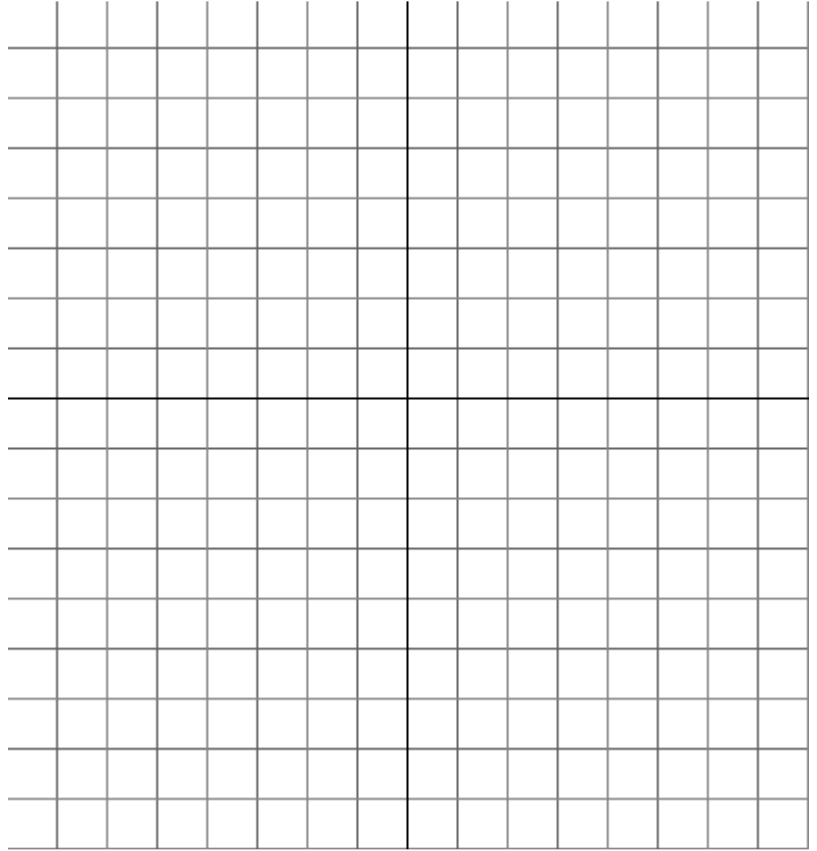
enclosed by the given curves is revolved about the x -axis.

$$y = \sqrt{25 - x^2}, y = 3$$

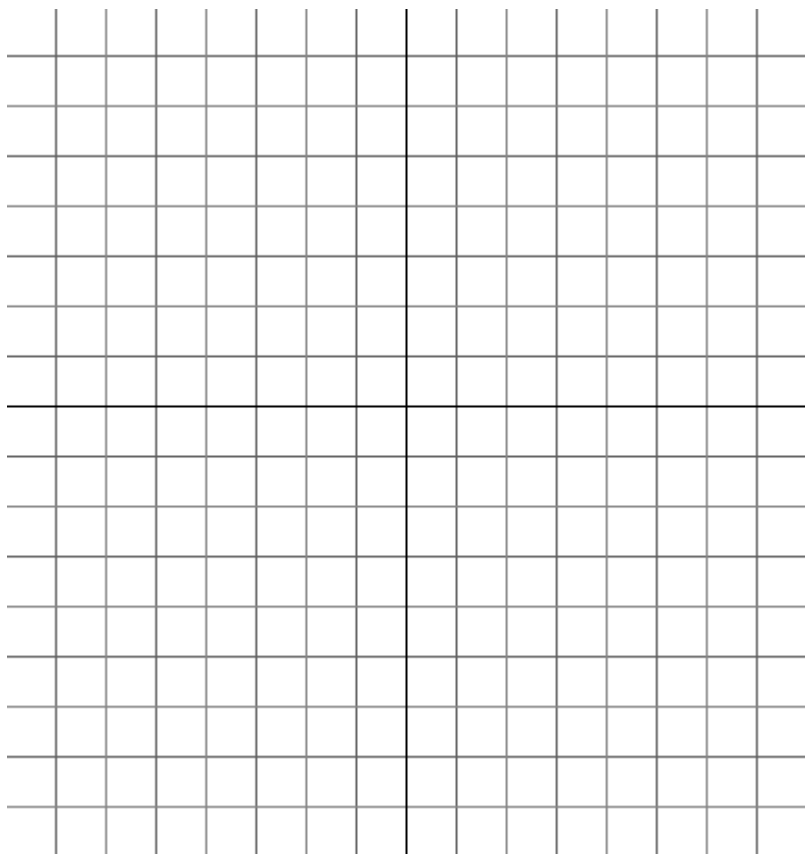


- [7] Write a definite integral that represents the volume of the solid that results when the region enclosed by the given curves is revolved about the y -axis.

$$x = y^2, x = y + 2$$



Write a definite integral that represents the volume of the solid that results when the region enclosed by $y = \sqrt{x}$, $y = 0$, $x = 9$ is revolved about the line $x = 9$.



[9] Write a definite integral that represents the volume of the solid that results when the region enclosed by $x = y^2$ and $x = y$ is revolved about the line $y = -1$.

