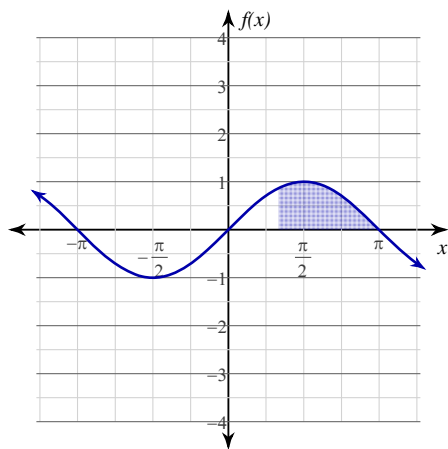


# Evaluating Definite Integrals

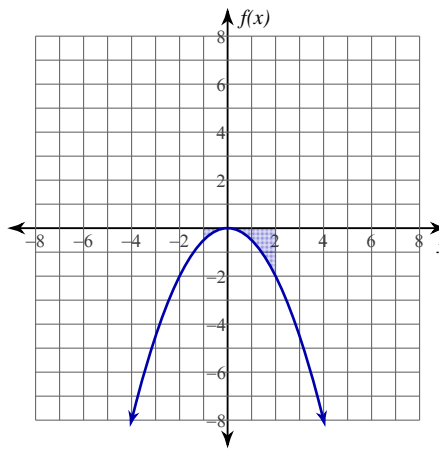
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**Evaluate each definite integral. Note: For problems 1-4, compare your numerical answer to the area shown to see if it makes sense. Remember, the definite integral represents the area between the function and the x-axis over the given interval. Area above the x-axis is positive. Area below the x-axis is negative.**

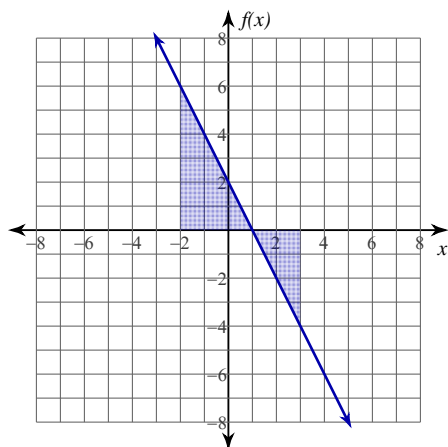
1)  $\int_{\frac{\pi}{3}}^{\pi} \sin x \, dx$



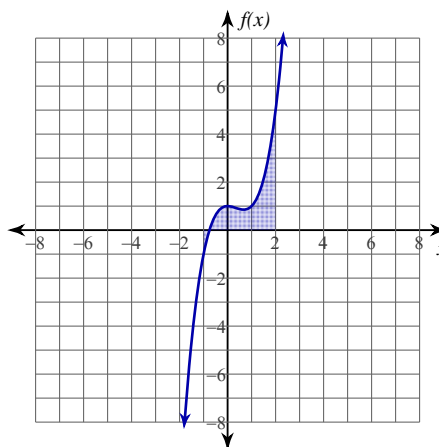
2)  $\int_{-1}^2 -\frac{x^2}{2} \, dx$



3)  $\int_{-2}^3 (-2x + 2) \, dx$



4)  $\int_{-1}^2 (x^3 - x^2 + 1) \, dx$



$$5) \int_{-3}^2 (-x - 1) dx$$

$$6) \int_{-3}^1 (2x + 2) dx$$

$$7) \int_0^3 (-2x^2 + 4x + 2) dx$$

$$8) \int_{-2}^2 5x^{\frac{1}{3}} dx$$

$$9) \int_{\frac{\pi}{6}}^{\frac{\pi}{2}} -\sin x dx$$

$$10) \int_{-1}^0 e^x dx$$

## Answers to Evaluating Definite Integrals (ID: 1)

$$1) \frac{3}{2} = 1.5$$

$$2) -\frac{3}{2} = -1.5$$

$$3) 5$$

$$4) \frac{15}{4} = 3.75$$

$$5) -\frac{5}{2} = -2.5$$

$$6) 0$$

$$7) 6$$

$$8) 0$$

$$9) -\frac{\sqrt{3}}{2} \approx -0.866$$

$$10) \frac{e-1}{e} \approx 0.632$$