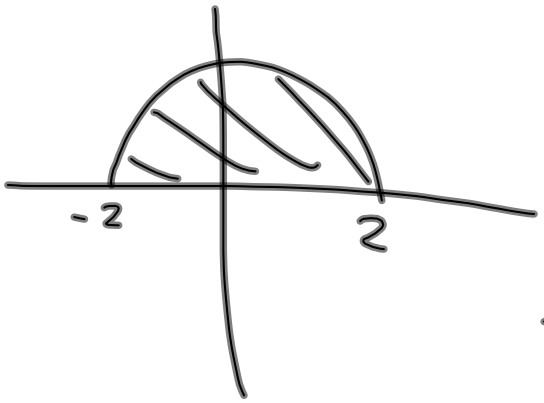
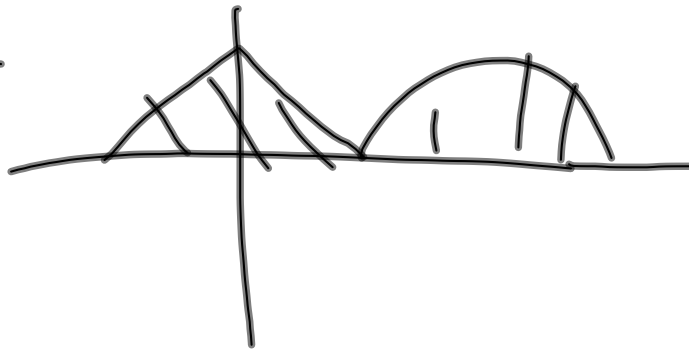
$$\int_{-2}^{2} \sqrt{4-x^2}\,dx = \frac{1}{2}\pi(2)^2$$

$$= 2\pi$$





$$\sin\left(\frac{27\pi}{13}\right) = \sin\left(\frac{26\pi}{13} + \frac{\pi}{13}\right)$$

$26\pi = 2\pi$

$f(x) = \sin x$

$c = 2\pi$

$\Delta x = \frac{\pi}{13}$

MVT $f(c) = \frac{1}{b-a}\int_a^b f(x)\,dx$

$f(x) = 2x - 1$, $[-2, 3]$

$2c - 1 = \frac{1}{3-(-2)}\int_{-2}^{3}(2x-1)\,dx$

$2c - 1 = \frac{1}{5}\left[x^2 - x\right]_{-2}^{3}$

$10c - 5 = 6 - 6$

$10c = 5$

$c = \frac{1}{2}$

$\int_a^b = \int_a^c + \int_c^b$

$\int_a^b = -\int_b^a$

$$F(x) = \int_{x^2}^{3} 5\cos 2t\,dt$$

$F(x) = \int_a^{g(x)} f(t)\,dt$ $F'(x) = f(g(x)) \cdot g'(x)$

$F'(x) = ?$

$$F(x) = -\int_3^{x^2} 5\cos 2t\,dt$$

$$\int_{e^x}^{5x^5}$$

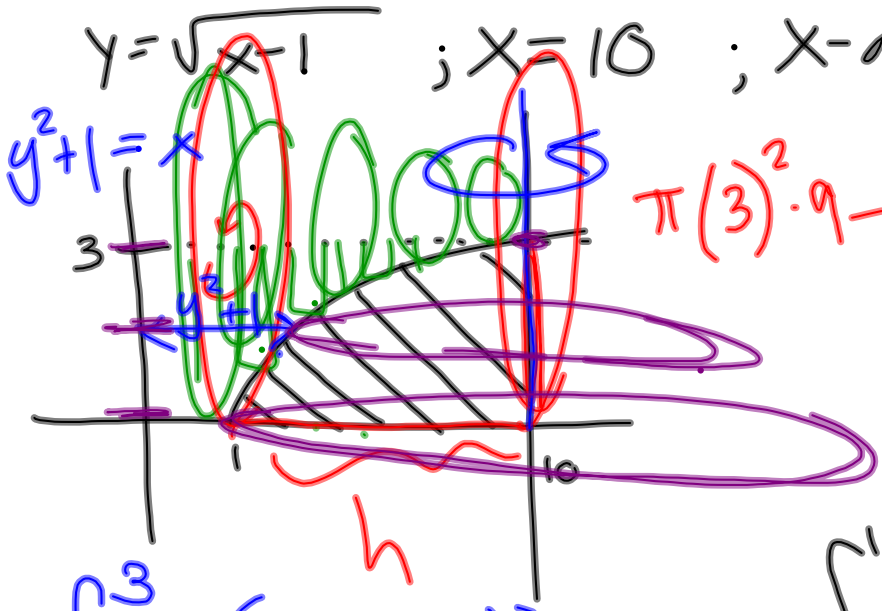
$$F'(x) = 5\cos 2(x^2) \cdot 2x$$

$$F(x) = \int_x^{g(x)} f(t)\,dt$$

$$\int_x^c + \int_c^{g(x)}$$

$$-\int_c^x + \int_c^{g(x)}$$

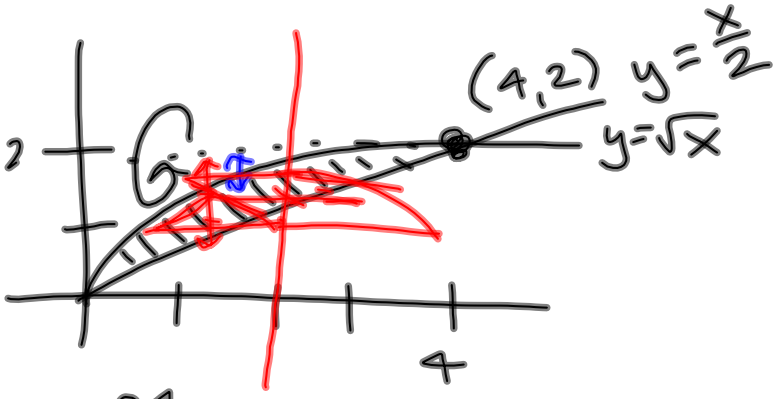
$y=\sqrt{x-1}$; $x=10$; x-axis

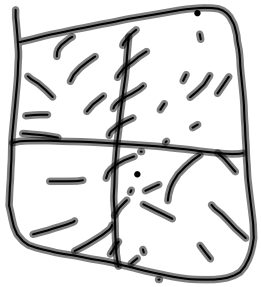


$$\pi(3)^2\cdot 9-\int_1^{10}\pi\left(3-\sqrt{x-1}\right)^2dx$$

area = $\int_1^{10}\sqrt{x-1}\,dx$

$$\int_0^3\pi\left(10-(y^2+1)\right)^2dy$$





(a) $\int_0^4\left(\sqrt{x}-\frac{x}{2}\right)dx$

(b) $\int_0^4\left(\sqrt{x}-\frac{x}{2}\right)^2dx$

(c) $\int_0^4\pi\left(2-\frac{x}{2}\right)^2dx-\int_0^4\pi\left(2-\sqrt{x}\right)^2dx$