11) Suppose that f and g are continuous and that $\int_3^7 f(x)\,dx = -2$ and $\int_3^7 g(x)\,dx = 8$. 11) 0

Find $\int_3^7 [4f(x) + g(x)]\,dx$

(1) $4\left(\int_3^7 f(x)\right) + \left(\int_3^7 g(x)\right)$

$4(-2) + (8) = -8 + 8$

Evaluate the definite integral.

12) $\int_0^{\pi} 6 \sin x\,dx$ 12) 12

(12) $\left|_0^{\pi} -6\cos x\right.$

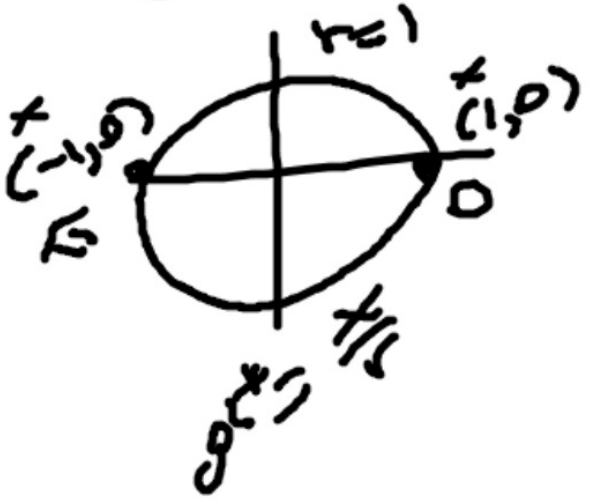
$-6\cos\pi - (-6\cos 0)$

$F(b) - F(a)$

$-6(-1) - (-6(1))$

$6 + 6$

13) $\int_{-2}^{-1} 2x^{-4}\,dx$ 13)



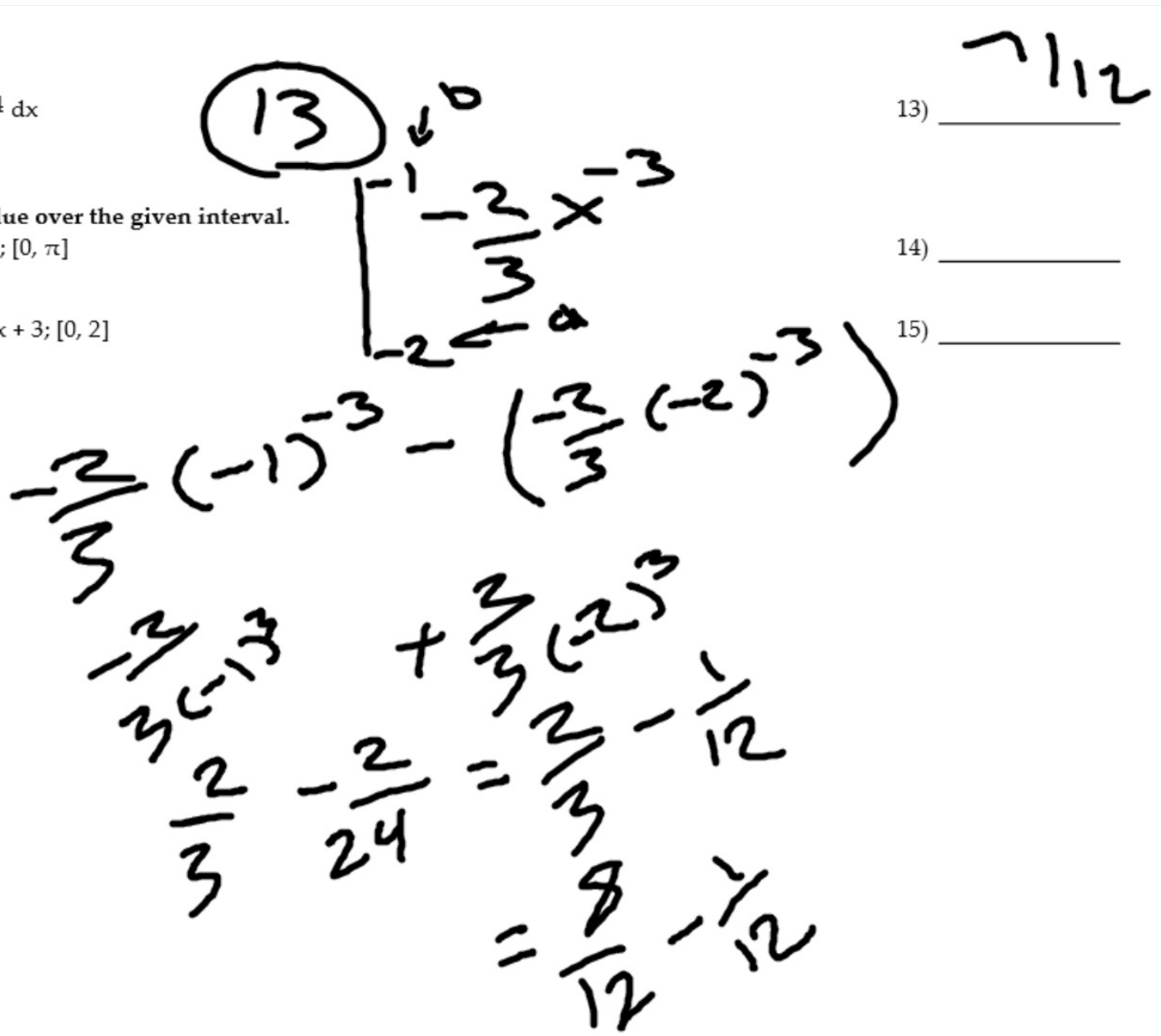
0

13) $\int_{-2}^{-1} 2x^{-4}\,dx$ 13) _____

Find the average value over the given interval.

14) $y = 3 \sin x; [0, \pi]$ 14) _____

15) $y = x^2 - 6x + 3; [0, 2]$ 15) _____



Find the average value over the given interval.

14) $y = 3 \sin x; [0, \pi]$ 14) _____

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$6/\pi$

$\int_0^{\pi} 3 \sin x$

(14) $\left| -3\cos x \right|_0^{\pi}$

$-3\cos\pi - (-3\cos 0)$

$-3(-1) + 3(1) = 6$

$\frac{1}{\pi - 0} \cdot 6 = \frac{6}{\pi}$

Find the average value over the given interval.

14) $y = 3 \sin x; [0, \pi]$ 14) _____

15) $y = x^2 - 6x + 3; [0, 2]$ 15) _____

$-10/3 = -5/3$

$\left| \frac{1}{3}x^3 - 3x^2 + 3x \right|_0^2$

$\frac{1}{3}(2)^3 - 3(2)^2 + 3(2)$

$\frac{8}{3} - 12 + 6 = \frac{8}{3} - \frac{18}{3} = \frac{-10}{3}$

$\frac{1}{b-a} = \frac{1}{2-0} = \frac{1}{2} = \frac{10}{6}$

$-\frac{10}{3} \cdot -\frac{1}{2}$