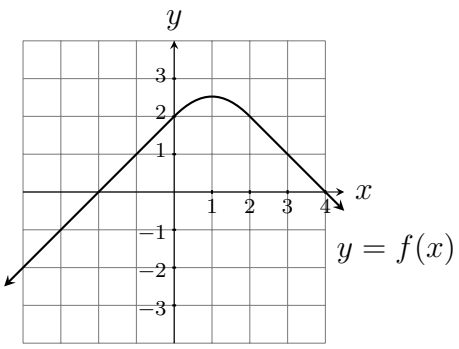
Name: _____

Quiz 23 ♡

MATH 200
April 16, 2026

1. Answer the questions about the function $f(x)$ graphed below.



(a) $\displaystyle\int_{-3}^{-1} f(x)\,dx =$

(b) $\displaystyle\int_{4}^{2} f(x)\,dx =$

(c) $\displaystyle\int_{-2}^{0} f(x)\,dx =$

(d) Suppose $\displaystyle\int_{0}^{2} f(x)\,dx = 4.7$. Find $\displaystyle\int_{-2}^{4} f(x)\,dx$.

(e) $\displaystyle\lim_{n\to\infty}\sum_{k=1}^{n} f\left(-3+\frac{2k}{n}\right)\frac{2}{n} =$

2. Suppose for functions f and g we have: $\displaystyle\int_{1}^{4} f(x)\,dx = 1$, $\displaystyle\int_{4}^{6} f(x)\,dx = 2$, $\displaystyle\int_{1}^{6} g(x)\,dx = 3$.

Find $\displaystyle\int_{1}^{6} \big(2f(x)+g(x)\big)\,dx$

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Quiz 23 ♣

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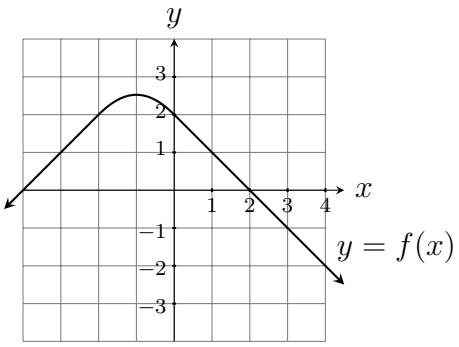
1. Answer the questions about the function $f(x)$ graphed below.



(a) $\displaystyle\int_1^3 f(x)\,dx =$

(b) $\displaystyle\int_4^2 f(x)\,dx =$

(c) $\displaystyle\int_0^1 f(x)\,dx =$

(d) Suppose $\displaystyle\int_{-2}^0 f(x)\,dx = 4.7$. Find $\displaystyle\int_{-2}^2 f(x)\,dx$.

(e) $\displaystyle\lim_{n\to\infty}\sum_{k=1}^{n} f\left(\frac{k}{n}\right)\frac{1}{n} =$

2. Suppose for functions f and g we have: $\displaystyle\int_1^4 f(x)\,dx = 3$, $\displaystyle\int_4^6 f(x)\,dx = 2$, $\displaystyle\int_1^6 g(x)\,dx = 1$.

Find $\displaystyle\int_1^6 \big(5f(x) + g(x)\big)\,dx$

Name: _____

Quiz 23 ♢

MATH 200
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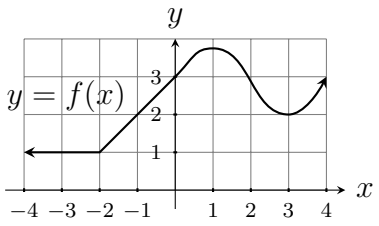
1. A function $f(x)$ is graphed below. If $\int_{-4}^{4} f(x)\,dx = 17.8$, what is $\int_{0}^{4} f(x)\,dx$?



2. Suppose f is a function for which $\int_{2}^{5} f(x)dx = 4$ and $\int_{2}^{8} f(x)dx = 9$. Find $\int_{8}^{5} 7f(x)dx$.

3. Write the limit $\lim_{n\to\infty} \sum_{k=1}^{n} \sin\left(\sqrt{\frac{\pi k}{n}}\right) \frac{\pi}{n}$ as a definite integral.

4. Write $\int_{0}^{5} e^{x}\,dx$ as a limit of Riemann sums (such as in problem 3 above).

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Quiz 23 ♠

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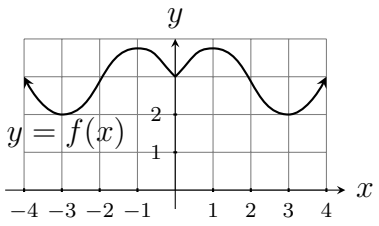
1. A function $f(x)$ is graphed below. If $\int_{-4}^{4} f(x)\,dx = 22.6$, what is $\int_{0}^{4} f(x)\,dx$?



2. Suppose f and g are functions for which $\int_0^5 f(x)\,dx = 3$, $\int_0^2 3g(x)\,dx = 12$, and $\int_2^5 g(x)\,dx = -1$. Find $\int_0^5 3f(x) - g(x)\,dx$.

3. $\lim_{n\to\infty} \sum_{k=1}^{n} \dfrac{1}{1+(7k/n)^2}\,\dfrac{7}{n}$ as a definite integral.

4. Write $\int_3^4 \sqrt{x}\,dx$ as a limit of Riemann sums (such as in problem 3 above).