Integration through U-Sub Review

Name: Key **Date:** ____________

1. $\lim\limits_{n\to\infty} \frac{2}{n}\sum\limits_{k=1}^{n}\frac{2k}{n}$ could be written as which definite integral?

→ interval is 2 and $\Delta x = \frac{a}{n}$

↳ $\frac{2}{n} \to \Delta x$ if $k=1$ $k=n$ $\frac{2}{n}$ 2 ↓ end of interval

A. $\int_0^2 2x\,dx$ ~~B.~~ $\int_0^1 \frac{1}{x}\,dx$ C. $\int_0^2 x\,dx$

D. $\int_0^2 \frac{1}{x}\,dx$ ~~E.~~ $\int_0^1 x\,dx$

2. If $\int_0^a x^5\,dx = k$ for $a > 0$ then, in terms of k, $\int_0^a (2 - x^5)\,dx =$ ________

A. $k-2$ B. $k+2$ C. $2k$

D. $2-k$ E. $2a-k$

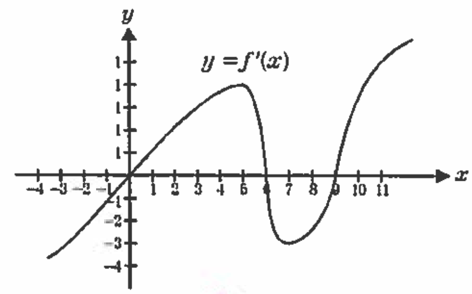
$\int_0^a 2 - \int_0^a x^5$

$2x\Big|_0^a - k$

$2a - 2(0) - k$ $2a - k$

3. Consider the graph of $f'(x)$ as shown.

Determine the interval over which the graph of f concave downwards. $f'' < 0$ f' dec.



A. $3 < x < 5$ B. $5 < x < 7$ C. $5 \le x < 7$

D. $0 < x < 6$ E. $6 < x < 9$

4. Find the average value of $2x$ over the interval $a \le x \le b$.

A. $b^2 - a^2$ B. $a^2 - b^2$ C. $2b^2 - a^2$

D. $a - b$ E. $b + a$

Avg value $= \frac{\text{Integral}}{\text{Interval}}$

$$\frac{\int_a^b 2x}{b-a} = \frac{\frac{2x^2}{2}\Big|_a^b}{b-a}$$

$$= \frac{b^2-a^2}{b-a} = \frac{(b-a)(b+a)}{b-a}$$

5. $\int \frac{\cos(7x)}{\sin(7x)} dx =$

$u = \sin 7x$

$\frac{du}{dx} = \cos 7x \cdot 7$

$\frac{du}{7} = \cos 7x\,dx$

$\frac{1}{7}\int \frac{1}{u}\,du$

$\frac{1}{7} \ln|u| + C$

A. $\frac{1}{7} \ln|\cos(7x)| + C$

B. $\frac{1}{7} \ln\left|\cos\left(\frac{1}{7}x\right)\right| + C$

C. $-\frac{1}{7} \ln|\sin(7x)| + C$

D. $\frac{1}{7} \ln|\sin(7x)| + C$

E. $\frac{1}{7} \ln\left|\sin\left(\frac{1}{7}x\right)\right| + C$

$\frac{1}{7} \ln|\sin 7x| + C$

6. If $\frac{dy}{dx} = e^{-5x}$, then $y =$

A. $-5e^{-\frac{1}{5}x} + C$

B. $-\frac{1}{5}e^{-\frac{1}{5}x} + C$

C. $-\frac{1}{5}e^{-5x} + C$

D. $-5e^{-5x} + C$

E. $e^{-5x} + C$

$\int dy = \int e^{-5x} dx$

$u = -5x$

$\frac{du}{dx} = -5$

$\frac{du}{-5} = dx$

$y = \frac{-1}{5}\int e^u\,du$

$y = -\frac{1}{5}e^u + C \rightarrow -\frac{1}{5}e^{-5x} + C$

7. Using this part of the Fundamental Theorem of Calculus:

$$\frac{d}{dx}\int_a^b f(t)\,dt = f(x)$$

find $\frac{d}{dx}\int_1^x (4c^3 + 7c + 2)\,dc$. $4x^3 + 7x + 2$

A. $4x^3 + 7x + 2$

B. $4c^2 + 7c + 2$

C. $4x^2 + 7c + 2$

D. $8x + 7$

E. $8c + 7$

8. $\frac{d}{dx}\int_x^4 \frac{2t}{t^3 + 4}\,dt =$

A. $\frac{2x}{x^3 + 4}$

B. $\frac{2t}{t^3 + 4}$

C. $-\frac{2t}{t^3 + 4}$

D. $-\frac{2x}{x^3 + 4}$

E. $\frac{2}{17}$

$-\frac{2x}{x^3 + 4}$

9. Which of the following is the indefinite integral for $\int 7^x\,dx$?

$\frac{7^x}{\ln 7} + C$

A. $7^x + C$

B. $\ln 7 + C$

C. $\frac{7^x}{\ln 7} + C$

D. $\frac{e^x}{\ln 7} + C$

E. $7\frac{7^x}{\ln 7} + C$

10. Integrate: $\int 5 \sec x \tan x\,dx$

$= 5\sec x + C$

A. $5\sec^3 x \tan x + C$

B. $5\sec x + C$

C. $\frac{1}{5}\sec^3 x \tan x + C$

D. $5\left[\sec^3 x + \sec x \tan^2 x\right] + C$

E. $5\sec^2 x + C$

11. For what value(s) of k does $\int_2^k x\,dx = 6$?

A. 6 B. 4 only C. ± 4

D. $2\sqrt{3}$ E. $\pm 2\sqrt{3}$

$$\left.\frac{x^2}{2}\right|_2^k = 6$$

$$\frac{k^2}{2} - \frac{2^2}{2} = 6 \quad \frac{k^2}{2} = 6 + 2$$

$$k^2 = 16$$
$$k = \pm 4$$

12. $\int (10x+2)e^{5x^2+2x-3}\,dx =$

A. $e^{5x^2+2x} + C$

B. $e^{5x^2+2x-3} + C$

C. $xe^{5x^2+2x-3} + C$

D. $e^{10x+2} + C$

E. $(5x^2+2x-3)e^{5x^2+2x-3} + C$

$$u = 5x^2 + 2x - 3$$
$$du = (10x+2)dx$$
$$\int e^u du = e^u + C$$

$$e^{5x^2+2x-3} + C$$

13. $\int \frac{\ln(5x)}{x}\,dx =$

$$u = \ln 5x$$
$$\frac{du}{dx} = \frac{1}{5x}\cdot 5$$

A. $\frac{1}{5}\ln 5x - x + C$ B. $\frac{1}{2}(\ln 5x)^2 + C$

C. $2x\ln 5x - x + C$ D. $\frac{1}{3}\ln\frac{1}{3}x + C$

E. $5x\ln 5x + C$

$$du = \frac{1}{x}dx$$

$$\int u\,du \rightarrow \frac{u^2}{2} + C$$

$$\rightarrow \frac{(\ln 5x)^2}{2} + C$$

$$\int_{-3}^{0} + \int_0^2 = \int_{-3}^{2}$$

14. Given $\int_{-3}^{2} f(x)\,dx = 3$ and $\int_{-3}^{0} f(x)\,dx = -2$.

Evaluate:

a) $\int_0^2 f(x)\,dx = 5$

b) $\int_3^8 f(x-6)\,dx = 3$

(a) $-2 + \int_0^2 = 3$

$$\int_0^2 = 5$$

(b)

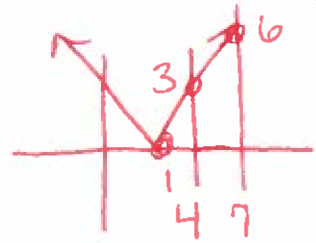
$$\int_3^8 f(x-6)\,dx = \int_{-3}^{2} f(x) = 3$$

↳ shifted 6 right

15. Evaluate: $\int_4^7 |x-1|\,dx$

A. 16.5 B. 13.5 C. 15

D. 18 E. 9



7-4

$$A = \frac{1}{2}(3+6)(3)$$
$$\frac{1}{2}(27)$$
$$= \frac{27}{2}$$

C

16. Use a Riemann sum to approximate the area under the curve, and above the x-axis, for the curve $y = \cos x$ from $x = 0$ to $x = 1$. Use 4 sub-intervals and *left* endpoints. Answer to 3 decimal places.

A. 1.024 B. 0.872 C. 0.971

D. 0.895 E. 0.327

$$\frac{1-0}{4} = \frac{1}{4} \qquad 0 \quad \frac{1}{4} \quad \frac{1}{2} \quad \frac{3}{4} \quad 1$$

$$LRS \approx \frac{1}{4}\left(\cos 0 + \cos\frac{1}{4} + \cos\frac{1}{2} + \cos\frac{3}{4}\right)$$

$$\rightarrow .895$$

17. Choose the correct statement given that $\int_0^7 f(x)\,dx = 8$ and $\int_1^7 f(x)\,dx = -3$.

A. $\int_7^1 f(x)\,dx = -3$ B. $\int_0^1 f(x)\,dx = 5$

C. $\int_1^0 f(x)\,dx = 11$ D. $\int_0^1 f(x)\,dx = 11$

E. $\int_0^1 f(x)\,dx = -11$

$\int_0^1 + \int_1^7 = \int_0^7$

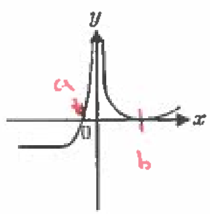
$x - 3 = 8$

if $\int_0^1 \to 11$

$\to -11 = \int_1^0$

$x = 11$

18. The graph of the *derivative* of $f(x)$ is shown here:

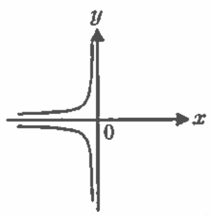


$-\ 0\ +\ +\ +$ $f'(x)$

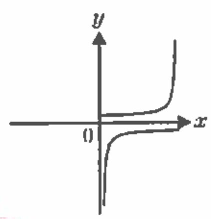
a 0 b

From the following graphs choose f.

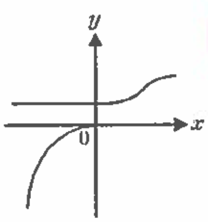
A.



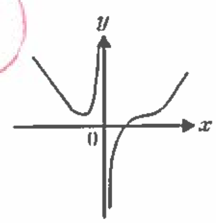
B.



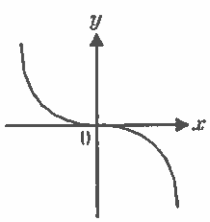
C.



D.



E.



C

19. Consider the integral $\int \frac{1}{x}\,dx$ from $x = 1$ to $x = 4$. Using a Riemann sum with 6 sub-intervals calculate the area under the curve, and above the x-axis, using left endpoints. Answer to 3 decimal places. $\frac{4-1}{6} = \frac{1}{2}$ 1, 1.5, 2, 2.5, 3, 3.5, 4

A. 1.218 B. 1.386 C. 1.593

D. 1.125 E. 2.073

$\frac{1}{2}\left(\frac{1}{1}+\frac{1}{1.5}+\frac{1}{2}+\frac{1}{2.5}+\frac{1}{3}+\frac{1}{3.5}\right)$

$\frac{1}{2}\left(1+\frac{2}{3}+\frac{1}{2}+\frac{2}{5}+\frac{1}{3}+\frac{2}{7}\right)$

C 20. Consider the integral $\int \frac{1}{x}\,dx$ from $x = 2$ to $x = 5$. Using a Riemann sum with 6 sub-intervals calculate the area under the curve, and above the x-axis, using right endpoints. Answer to 3 decimal places. $\frac{5-2}{6} = \frac{3}{6}$ 2, 2.5, 3, 3.5, 4, 4.5, 5

A. 0.846 B. 0.929 C. 1.358

D. 1.821 E. 2.309

$\frac{1}{2}\left(\frac{1}{2.5}+\frac{1}{3}+\frac{1}{3.5}+\frac{1}{4}+\frac{1}{4.5}+\frac{1}{5}\right) =$

21. Apply the chain rule to the Fundamental Theorem of Calculus:

$$\frac{d}{dx}\int_a^b f(t)\,dt = f(x)$$

to determine $\frac{d}{dx}\int_{-2}^{x^4} (t-5)\,dt$. $(x^4-5)(4x^3)$

A. $x - 5$ B. $4x^3(x^4 - 5)$

C. $4t^3(t^4 - 5)$ D. -112

E. $4t - 20$

C

22. Find the average value of $f(x) = 0.4e^{-2x^2}$ on the closed interval $[-1, 1]$.

A. 0.239 B. 0.139 C. 0.478

D. 0.119 E. 0.821

$$\frac{\int_{-1}^{1} .4e^{-2x^2}\,dx}{1 - -1} \to \text{Calculator} =$$

23. Evaluate: $\int_{\frac{\pi}{2}}^{x} \cos t\,dt$ $\quad \sin t \Big|_{\frac{\pi}{2}}^{x}$

A. $\sin x - 1$ B. $\sin x + 1$ C. $\sin x$

D. $-\sin x$ E. $-\sin x - 1$

$\sin x - \sin \frac{\pi}{2}$

$\sin x - 1$

24. If $\int_1^5 f(x)\,dx = 3$ and $\int_1^5 g(x)\,dx = -9$, then what is the value of $\int_1^5 (3f - 2g)(x)\,dx$?

A. 27 B. −27 C. −9

D. 9 E. 1

$3\int_1^5 f - 2\int_1^5 g$

$3 \cdot 3 - 2 \cdot -9 = 9 + 18$

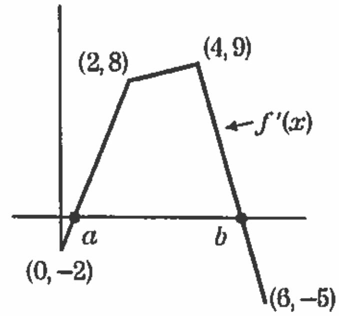
25. If $\int_0^a x^3\,dx = k$ for $a > 0$ then, in terms of k, $\int_2^{a+2} (x-2)^3\,dx =$ $\underline{\int_0^a x^3\,dx}$

↳ shift right 2

A. $k - 2$ B. $k + 2$ C. k

D. $k + 2a$ E. $8k$

26. Given the graph of f':



→ f' + − 6

From the graph it follows that f has a local max at

A. $x = 0$ B. $x = 4$ C. $x = a$

D. $x = 6$ E. $x = b$

27. Evaluate: $\int_0^2 \sqrt{27x^{10}}\,dx$ $\quad \to \sqrt{27} \cdot \sqrt{x^{10}}$ $\quad 3\sqrt{3} \cdot x^5$

A. $\frac{3}{32}$ B. $16\sqrt{3}$ C. 16

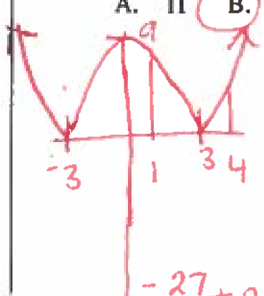
D. $32\sqrt{3}$ E. 32

$3\sqrt{3}\int_0^2 x^5\,dx$

$3\sqrt{3} \cdot \frac{x^6}{6}\Big|_0^2 \to \frac{\sqrt{3}}{2}(2^6 - 0^6)$

28. Evaluate: $\int_1^4 |x^2 - 9|\,dx$ $\quad x^2 - 9 = 0$ @ $x = \pm 3$

A. 11 B. $\frac{38}{3}$ C. $\frac{43}{3}$ D. $\frac{37}{2}$ E. 15



$\int_1^3 (-x^2 + 9)\,dx + \int_3^4 (x^2 - 9)\,dx$

$\frac{-x^3}{3} + 9x\Big|_1^3 + \frac{x^3}{3} - 9x\Big|_3^4$

$-\frac{27}{3} + 27 + \frac{1}{3} - 9 + \frac{64}{3} - 36 - \frac{27}{3} + 27$

$\to 54 - 45 + \frac{11}{3} \to 9 + \frac{11}{3} \to 12\frac{2}{3} \to 38/3$

$F'(x) = -f(x^2-1)\cdot 2x$

29. Let $F(x) = \int_{x^2-1}^{0} f(t)\,dt$ and $f(8) = -4$.

Find $F'(3)$ by using the Fundamental Theorem of Calculus:

$$\frac{d}{dx}\int_a^b f(t)\,dt = f(x)$$

A. 24 B. -24 C. 12

D. -12 E. 32

$F'(3) = -f(3^2-1)\cdot 2\cdot 3$

$= -f(8)\cdot 6$

$= -(-4)\cdot 6$

$= 24$

30. If $\frac{dy}{dx} = \sin^5 x \cos x$, then $y =$

$\int dy = \int \sin^5 x \cos x\, dx$

A. $\frac{\sin^6 x}{6} + C$ B. $\frac{\cos(x^6 + C)}{6}$

C. $\frac{\cos^6 x}{2} + C$ D. $\frac{1}{6}\sin x^6 \cos x + C$

E. $\frac{1}{6}\cos x^6 + C$

$u = \sin x$

$du = \cos x\, dx$

$y = \int u^5\, du$

$y = \frac{u^6}{6} + C \rightarrow \frac{(\sin x)^6}{6} + C$

31. Integrate: $\int 3\csc x \cot x\, dx$

$= -3\csc x + C$

A. $-3\csc x + C$ B. $-3\csc^2 x + C$

C. $\frac{3}{2}\csc^2 x \cot x + C$ D. $-\frac{3}{4}\csc^2 x \cot^2 x + C$

E. $3\sin x \tan x + C$

C

32. Let $f(x) = \int_0^x (\sin t - \cos^2 t)\,dt$ for $0 \le x < 2\pi$. Over which interval is f increasing?

↳ if $f' > 0$

A. $0.666 < x < 2.475$ B. $2.475 < x$

C. $0 < x < 2\pi$ D. $0 < x < 0.666$

E. $0.666 < x < 2\pi$

$f'(x) = \sin x - \cos^2 x = 0$

graph over $0 \leftrightarrow 2\pi$

calc zeros

C

33. Estimate the definite integral by using the Trapezoidal Rule. [Use $n = 4$.]

$$\int_0^7 (x^2 - 7x)\,dx.$$

$\frac{7-0}{4} = \frac{7}{4}$

$0 \quad \frac{7}{4} \quad \frac{14}{4} \quad \frac{21}{4} \quad \frac{28}{4}$

A. -57.172 B. -53.594 C. -49.420

D. 53.593 E. 57.179

$\left(\frac{7}{4}\right)\left(\frac{1}{2}\right)\left(f(0) + 2f\left(\frac{7}{4}\right) + 2\left(\frac{14}{4}\right) + 2\left(\frac{21}{4}\right) + f\left(\frac{28}{4}\right)\right)$

if $f(x) = x^2 - 7x$ use calculator

34. Integrate: $\int \cos 4x\, dx$

$u = 4x \quad du = 4dx$

$\frac{du}{4} = dx$

A. $4\sin 4x + C$ B. $\frac{1}{8}\cos 4x + C$

C. $\frac{1}{4}\sin 4x + C$ D. $\frac{1}{2}\sin 4x + C$

E. $\frac{1}{4}\sin 4x \cos 4x + C$

$\frac{1}{4}\int \cos u\, du$

$\frac{1}{4}\sin u + C \quad \frac{1}{4}\sin 4x + C$

$u = \ln x \quad du = \frac{1}{x}\,dx$

35. Evaluate: $\int \frac{\cos(\ln x)}{x}\,dx$

A. $\cos(\ln x) + C$ B. $\sin(\ln x) + C$

C. $\cos(\ln x) + C$ D. $\sin(\cos x) + C$

E. $\ln(\ln x) + C$

$\int \cos u \, du$

$\sin u + C \quad \sin \ln x + C$

36. Given $g(x) = 2A + 3h(x)$ and $\int_1^4 h(x)\,dx = 4A$, find the average value of $g(x)$ over the interval $[1,4]$ in terms of A. $\frac{\int_1^4 g(x)}{4-1}$

A. $\frac{A}{3}$ B. $\frac{5A}{4}$ C. $\frac{10A}{3}$

D. $6A$ E. $12A$

$\int g(x) = \int 2A + 3h(x)$

$= \int 2A + \int 3h(x) \quad 2A(4-1) + 12A$

$= 2Ax\Big|_1^4 + 3(4A) \rightarrow 6A + 12A = 18A$

$\rightarrow 18A/3 = 6A$

37. Find the average value of $f(x) = x^2$ over the interval $[1,3]$

A. $\frac{26}{3}$ B. $\frac{13}{3}$ C. $\frac{9}{2}$ D. 4 E. $\frac{13}{2}$

$\frac{\int_1^3 x^2\,dx}{3-1} = \frac{\frac{x^3}{3}\Big|_1^3}{2}$

$\left(\frac{27}{3} - \frac{1}{3}\right)/2 = \frac{26}{3} \cdot \frac{1}{2} = \frac{13}{3}$

38. $\frac{d}{dx}\int_{7x}^{x^4} \sqrt{t^2 - 1} =$ ________

$\left(\sqrt{x^8 - 1}\right)(4x^3) - \left(\sqrt{49x^2 - 1}\right)(7)$

39. Evaluate: $\int \frac{3x^2 - 2x^{1/2} + 1}{x^{1/2}}\,dx$

A. $\frac{6}{5}x^{3/2} - 5x^{1/2} + C$

B. $\frac{2\sqrt{x}(3x^2 - 5\sqrt{x} + 5)}{5} + C$

C. $\frac{6}{5}x^{6/5} - 2x^{3/2} + 2x + C$

D. $\frac{\sqrt{x}}{5}(3x^2 - \sqrt{x} + 2) + C$

E. $\frac{4\sqrt{x}}{5}(3x^2 - \sqrt{x} + 3) + C$

$\int (3x^{1.5} - 2 + 1x^{-.5})\,dx$

$\frac{2}{5} 3x^{\frac{5}{2}} - 2x + 1 \cdot 2x^{\frac{1}{2}} + C$

↳ Fine But MC so have to match :)

$2\sqrt{x}\left(\frac{3}{5}x^2 - \sqrt{x} + 1\right) + C$

40. Choose the correct statement given that $\int_0^5 f(x)\,dx = 7$ and $\int_2^5 f(x)\,dx = -1$.

A. $\int_0^2 f(x)\,dx = 6$ B. $\int_5^2 f(x)\,dx = -1$

C. $\int_2^0 f(x)\,dx = 8$ D. $\int_0^2 f(x)\,dx = 8$

E. $\int_2^0 f(x)\,dx = -6$

$\int_0^2 + \int_2^5 = \int_0^5$

$x + -1 = 7$

$x = 8$

last step → $f(1) = -1 = 3 - 2 + 5 + D \quad D = -7$

41. Given $f(x) = Ax^3 + Bx^2 + cx + D$, and

I. $f(1) = -1$ $\quad f'(x) = 3Ax^2 + 2Bx + C$

II. $f'(1) = 10$ $\quad f''(x) = 6Ax + 2B$

III. $f''(0) = -4$ $\quad f'''(x) = 6A$

IV. $f''(1) = 14$

What is the value of $(A + B + C + D)$?

A. 3 B. 10 C. 7 D. 1 E. -1

$f''(1) = 14 = 6A + 2B$
$f''(0) = -4 = 2B \quad B = -2$
$14 = 6A - 4 \quad f'(1) = 10 = 9 - 4 + C$
$18 = 6A \quad C = 5$
$A = 3$

42. Determine: $\int (2 - \frac{1}{x})x^{-3}\,dx$

A. $\frac{1}{x^3} - \frac{1}{2x^2} + C$ B. $\frac{1}{3x^3} - \frac{1}{x^2} + C$

C. $-\frac{1}{x^3} + \frac{1}{x^2} + C$ D. $3x^{-3} - x^{-2} + C$

E. $-3x^{-3} - x^{-2} + C$

$\int (2x^{-3} - x^{-4})\,dx$

$\frac{2x^{-2}}{-2} + \frac{x^{-3}}{3} + C$

C 43. Approximate the area under the curve, and above the x-axis, for the curve $y = \ln(2x)$ from $x = 3$ to $x = 11$ by using a Riemann sum. Use 4 sub-intervals and *midpoints*.

A. 18.409 B. 22.884 C. 28.047

D. 20.665 E. 19.028

$\frac{11-3}{4} = \frac{8}{4} = 2$ $\quad$ 3 5 7 9 11 / 4 6 8 10 m

$2(\ln 8 + \ln 12 + \ln 16 + \ln 20)$

$f'(x) = 2ax + b$

44. If $f(x) = ax^2 + bx + c$ and $0 < m < n$, then $\int_m^n f''(x)\,dx =$ $\quad f'(n) - f'(m)$

A. 0 B. $2a(n - m)$

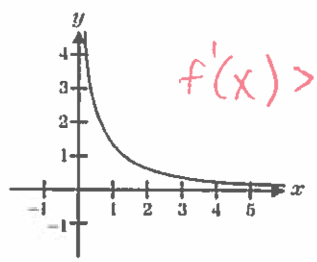
C. $2a(n^2 - m^2)$ D. $2a$

E. $2a + b$

$2an + b - 2am - b$

$2an - 2am$

45. The figure shows the graph of f', the derivative of the function f. The domain of the function f is $-10 \le x \le 10$.



$f'(x) > 0 \quad 0 < x$

For what value(s) of x does the function increase?

A. $x < 0$ B. $x > 0$ C. $2 < x < 10$

D. $1 < x < 10$ E. $x < 10$

46. Which statement is *not* true of the graph $f(x) = (x + 3)(x - 4)^2$?

$f'(x) = (x+3)(2)(x-4) + (x-4)^2$

T A. f has a relative minimum at $(4, 0)$

F B. f has a point of inflection at $(4, 0)$

T C. f has a relative maximum at $(-\frac{2}{3}, \frac{1372}{27})$

T D. f has an intercept at $(4, 0)$

T E. f has an intercept at $(-3, 0)$

$f'(x) = (x-4)(2x+6+x-4)$
$f'(x) = (x-4)(3x+2)$
$f''(x) = (x-4)(3) + (3x+2)$
$3x - 12 + 3x + 2$

+ − +
$-\frac{2}{3}$ $\quad$ 4

 $6x - 10$

Integration through U-Sub Review 2/5/2018

1.
Answer: C

2.
Answer: E

3.
Answer: B

4.
Answer: E

5.
Answer: D

6.
Answer: C

7.
Answer: A

8.
Answer: D

9.
Answer: C

10.
Answer: B

11.
Answer: C

12.
Answer: B

13.
Answer: B

14.
Answer: 5, 3

15.
Answer: B

16.
Answer: D

17.
Answer: D

18.
Answer: D

19.
Answer: C

20.
Answer: A

21.
Answer: B

22.
Answer: A

23.
Answer: A

24.
Answer: A

25.
Answer: C

26.
Answer: E

27.
Answer: D

28.
Answer: B

29.
Answer: A

30.
Answer: A

31.
Answer: A

32.
Answer: A

33.
Answer: B

34.
Answer: C

35.
Answer: B

36.
Answer: D

37.
Answer: B

38.
Answer: $4x^3\sqrt{(x^4)^2-1} - 7\sqrt{(7x)^2-1}$

39.
Answer: B

40.
Answer: D

41.
Answer: E

42.
Answer: B

C 43.
Answer: D

44.
Answer: B

45.
Answer: B

46.
Answer: B