Calculus
F 27 November 2013

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Response tables

$\sum$ points $= 100$

Pts agree

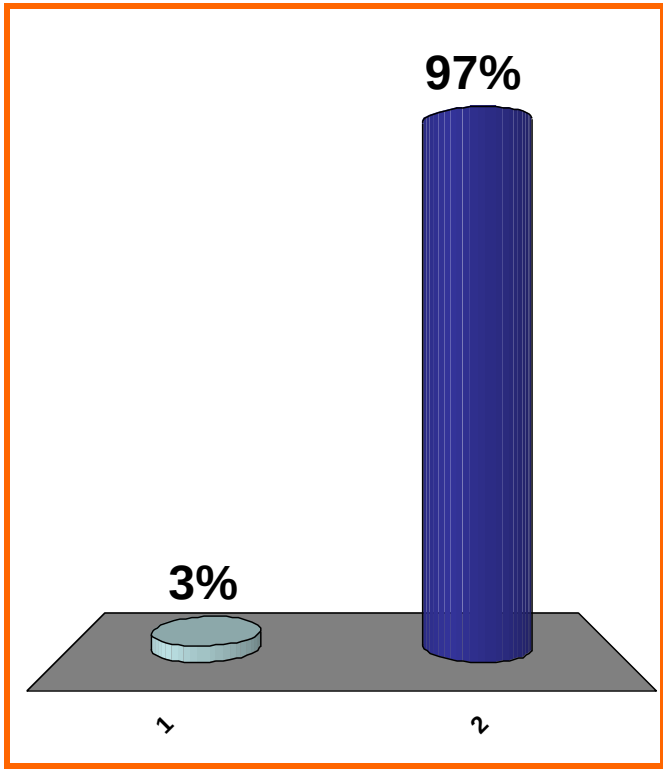
Answers agree

QUIZ
FOLLOWS

$1 + 1 = ??$

(a) 1

(b) 2



Newton's method for solving $e^{5x} + x^2 = 7$:

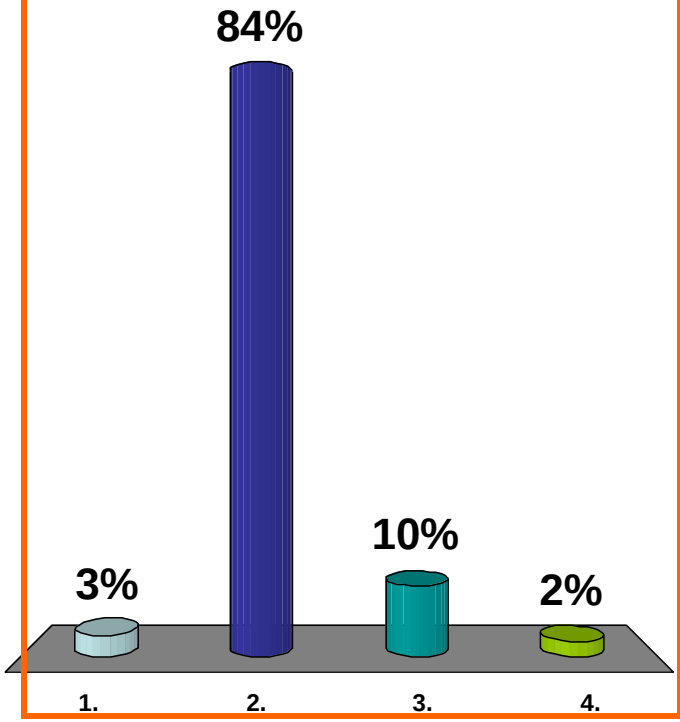
$$x_{n+1} = \text{??}$$

(a) $x_n - \dfrac{e^{5x_n} + x_n^2}{e^{5x_n} + 2x_n}$

(b) $x_n - \dfrac{e^{5x_n} + x_n^2 - 7}{5e^{5x_n} + 2x_n}$

(c) $x_n - \dfrac{e^{5x_n} + x_n^2 - 7}{e^{5x_n} + 2x_n}$

(d) none of the above



$f(7) = 4, \quad f'(7) = -8$

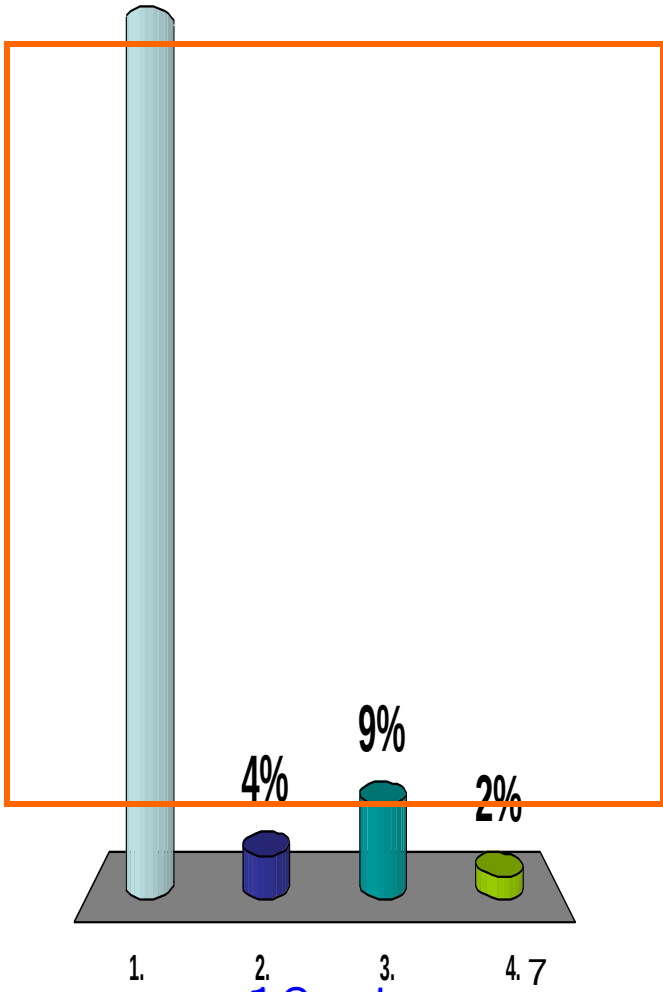
Linear approx. to $f(x)$ at $x = 7$?

(a) $4 - 8(x - 7)$

(b) $7x^2 - 8x + 4$

(c) $-8 + 4(x - 7)$

(d) none of the above



Topic 0540

10 pts

$$\frac{d}{dx}\left[5^x\right] = (5^x)(\ln 5)$$

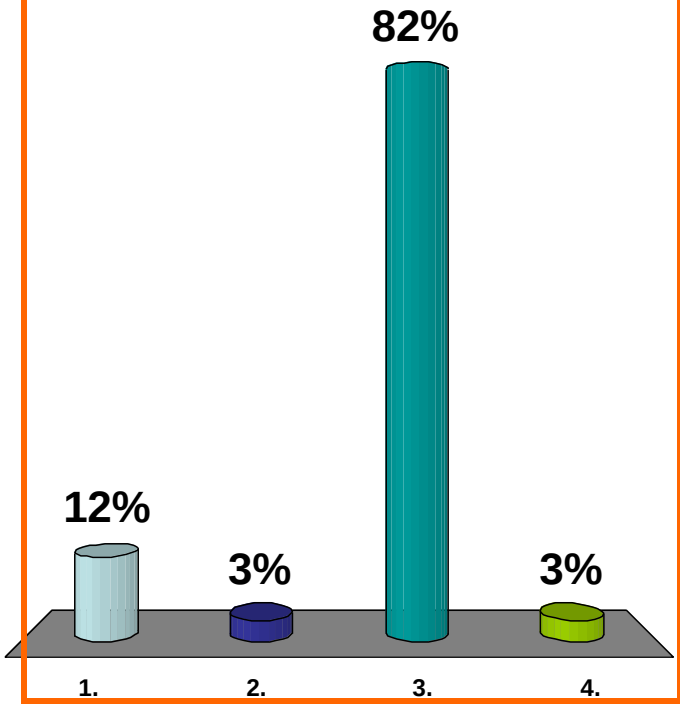
$$\int x^2 + 5^x \, dx = ??$$

(a) $\dfrac{x^3}{3} + \dfrac{5^{x+1}}{x+1} + C$

(b) $2x + (5^x)(\ln 5) + C$

(c) $\dfrac{x^3}{3} + \dfrac{5^x}{\ln 5} + C$

(d) none of the above



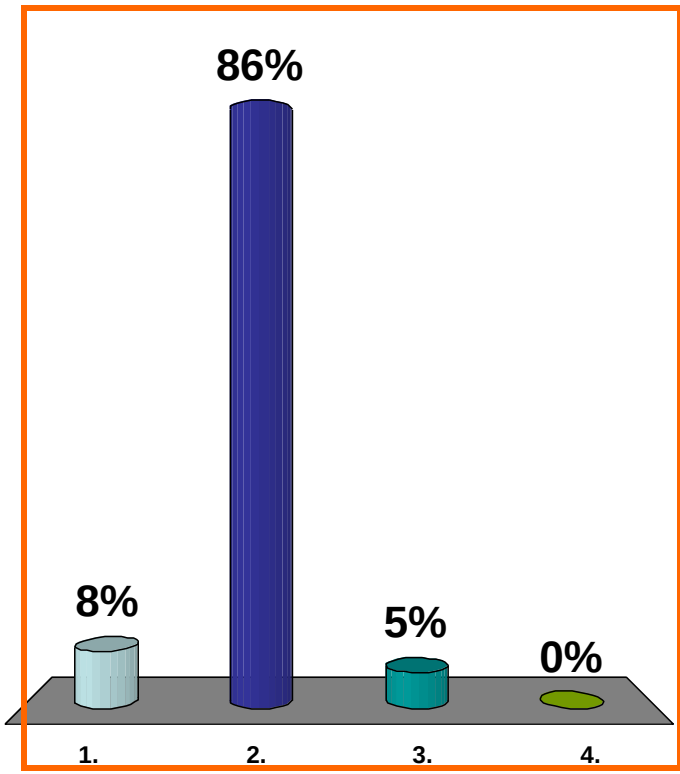
nth left endpt Riem. sum for $\int_1^2 e^x\,dx$

(a) $\sum_{j=1}^{n} \left[\frac{1}{n}\right] \left[e^{1+(j/n)}\right]$

(b) $\sum_{j=1}^{n} \left[\frac{1}{n}\right] \left[e^{1+(j/n)-(1/n)}\right]$

(c) $\sum_{j=1}^{n} \left[\frac{1}{n}\right] \left[e^{1+(j/n)-(1/(2n))}\right]$

(d) none of the above



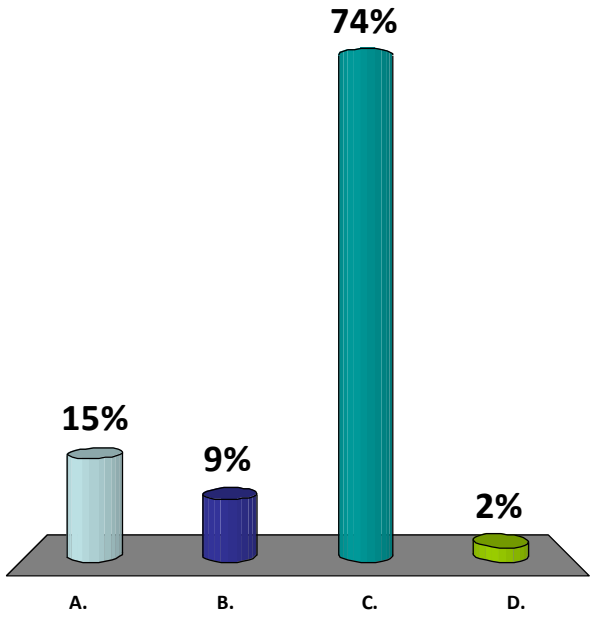
$$\frac{d}{dx}\left[\int_0^x (5t^3 + 2t - 1)\,dt\right]$$

(a) $\dfrac{5x^3}{3} + x^2 - x$

(b) $5t^3 + 2t - 1$

(c) $5x^3 + 2x - 1$

(d) none of the above



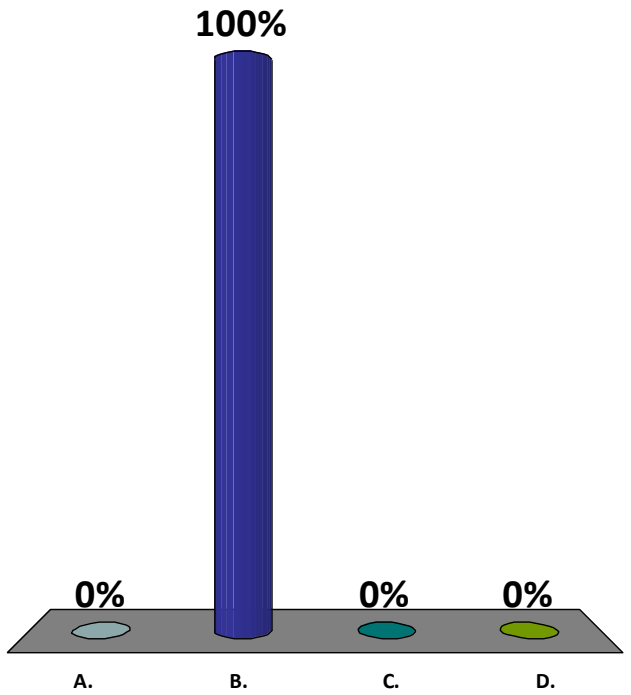
$$\triangle \left[\sum_{j=1}^{n} (5j^3 + 2j - 1) \right]$$

(a) $5n^3 + 2n - 1$

(b) $5(n+1)^3 + 2(n+1) - 1$

(c) $\dfrac{5(n+1)^2 n^2}{4} + n(n+1) - n$

(d) none of the above



$$F'(t) = e^{t^2}$$

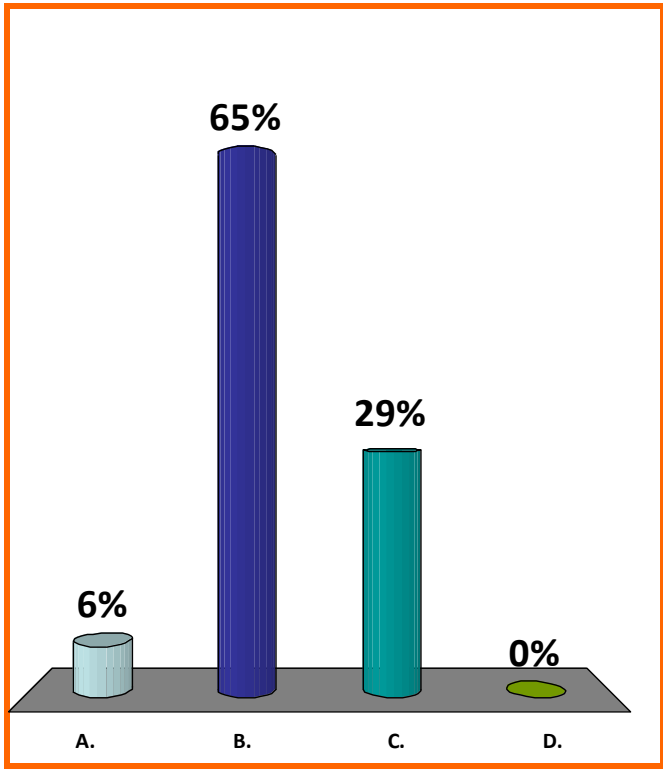
$$\frac{d}{dx}\left[\int_{x^2}^{x^5} e^{t^2}\, dt\right]$$

(a) $\frac{d}{dx}\left[(F(x))^5 - (F(x))^2\right]$

(b) $\frac{d}{dx}\left[(F(x^5)) - (F(x^2))\right]$

(c) $\frac{d}{dx}\left[(F(x^5))(5x^4) - (F(x^2))(2x)\right]$

(d) none of the above



$$F'(t) = e^{t^2}$$

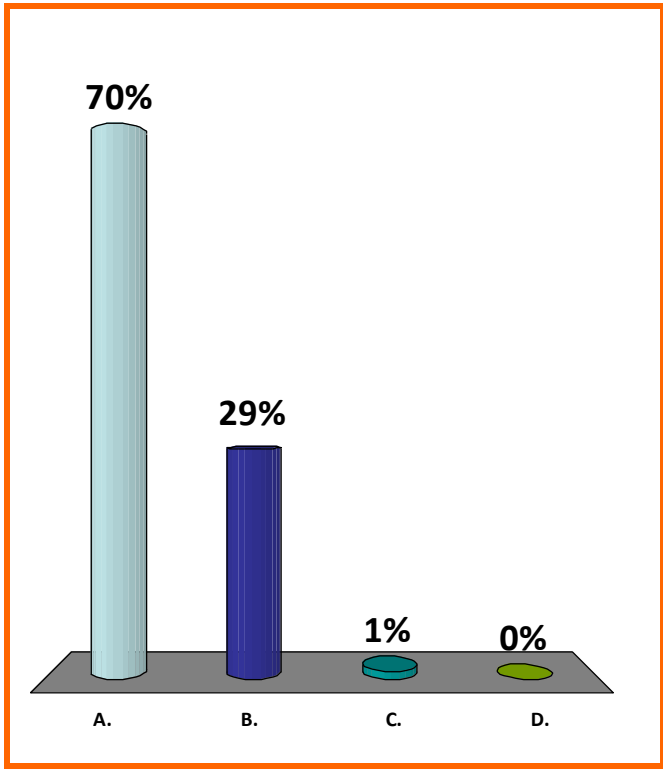
$$\frac{d}{dx}\left[(F(x^5)) - (F(x^2))\right]$$

(a) $(F'(x^5))(5x^4) - (F'(x^2))(2x)$

(b) $(F(x^5))(5x^4) - (F(x^2))(2x)$

(c) $(F'(x^5)) - (F'(x^2))$

(d) none of the above



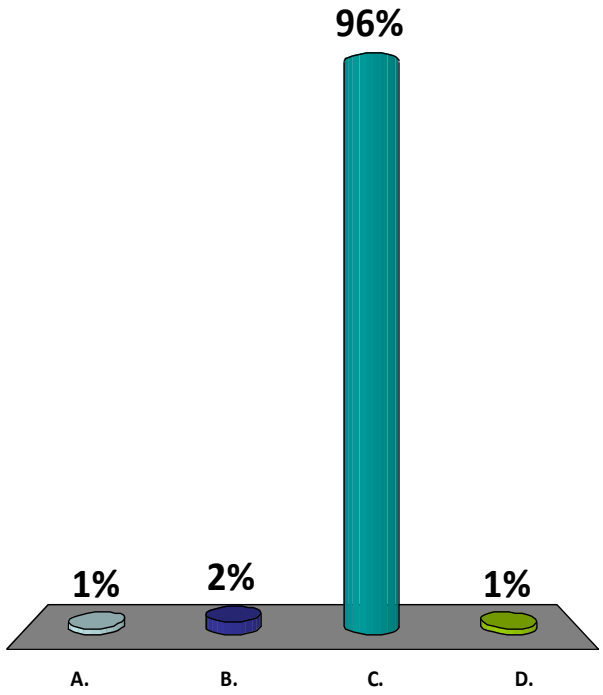
(a) $\frac{1}{7}\left[\int_3^7 x^4\,dx\right]$

(b) $\frac{1}{3}\left[\int_3^7 x^4\,dx\right]$

(c) $\frac{1}{4}\left[\int_3^7 x^4\,dx\right]$

(d) none of the above

$$\int_3^7 x^4\,dx = ??$$



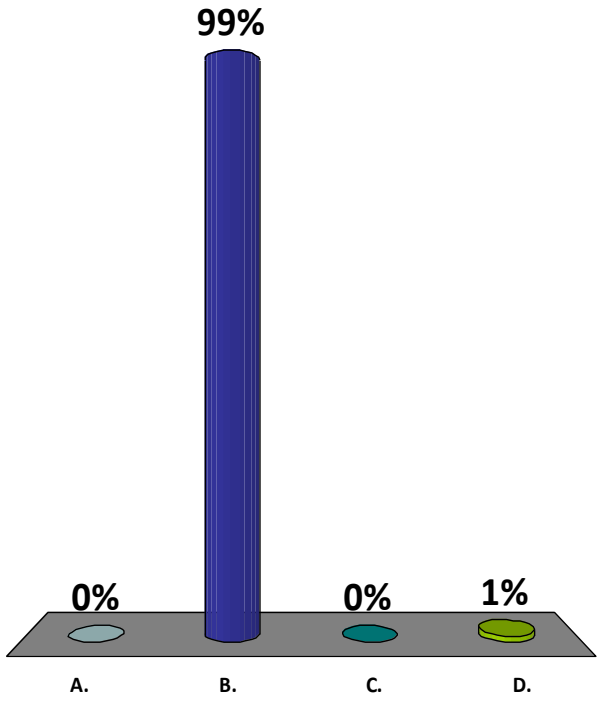
$$\int_0^{2\pi} \cos^2 x \, dx = ??$$

(a) 0

(b) 1/2

(c) 1

(d) none of the above



END
QUIZ