

Calculus

W 14 November 2012

RESET THE
SESSION

SET THE
PARTICIPANT
LIST

PLUG IN THE
RECEIVER

Boxed answers agree with
TurningPoint answers

Points agree with
TurningPoint points

Points total to 100

Topics covered are in bounds

QUIZ
FOLLOWS

$$\frac{d}{dx} [2^x] = (2^x)(\ln 2)$$

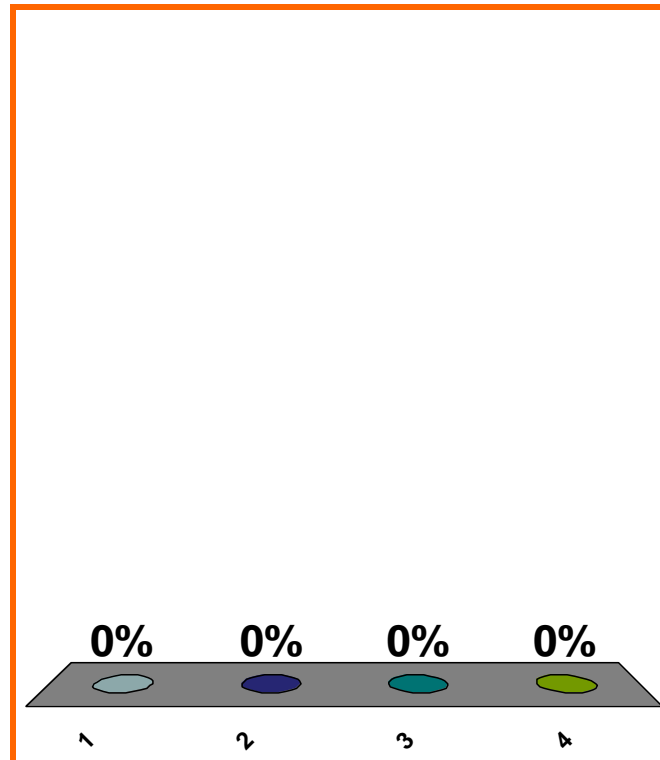
$$\int x^2 + 2^x dx = ??$$

(a) $\frac{x^3}{3} + \frac{2^{x+1}}{x+1} + C$

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

(c) $\frac{x^3}{3} + \frac{2^x}{\ln 2} + C$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0570

0 pts

5

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

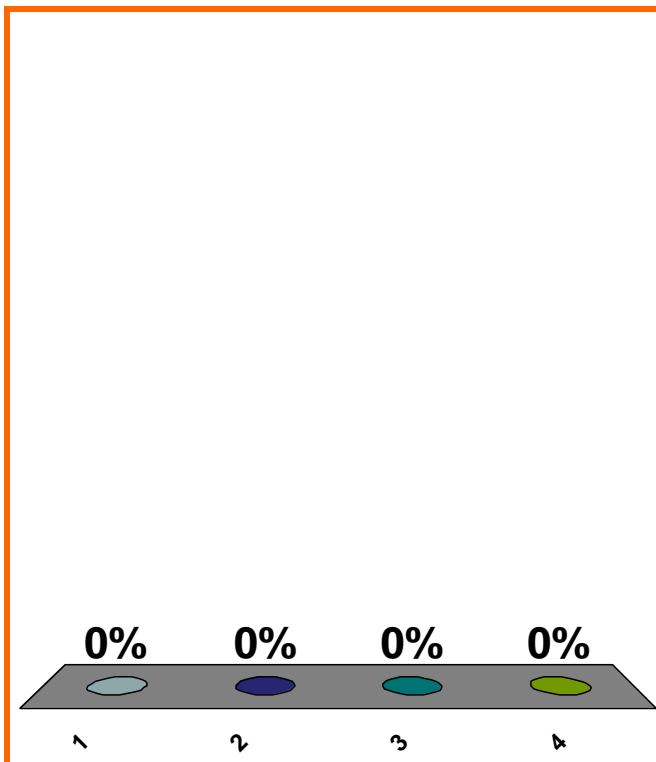
$$\int x^2 + 5^x dx = ??$$

$$(a) \frac{x^3}{3} + \frac{5^x}{\ln 5} + C$$

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

$$(c) \frac{x^3}{3} + \frac{5^{x+1}}{x+1} + C$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0570

10 pts

6

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

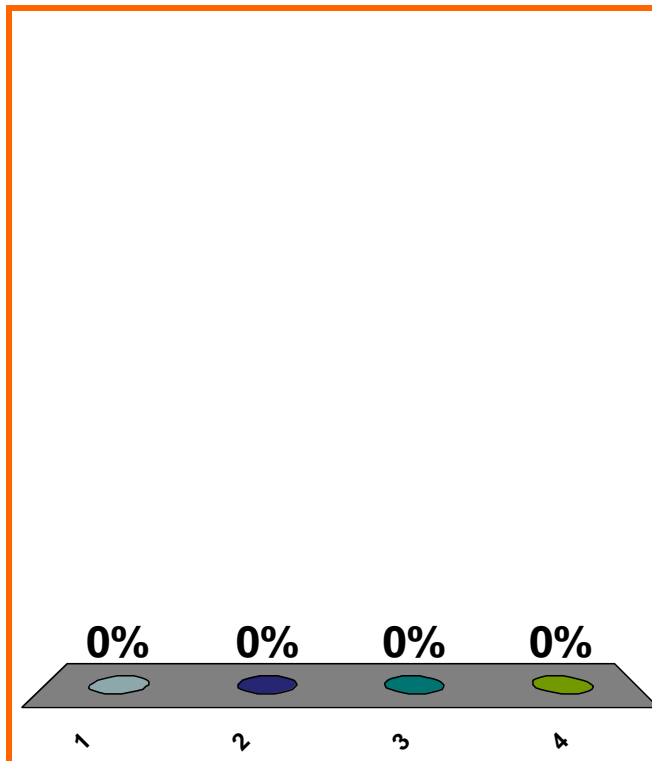
$$\int x^3 + 5^x dx = ??$$

$$(a) \frac{x^4}{4} + \frac{5^x}{\ln 5} + C$$

$$(b) 3x^2 + (5^x)(\ln 5) + C$$

$$(c) \frac{x^4}{4} + \frac{5^{x+1}}{x+1} + C$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0570

0 pts

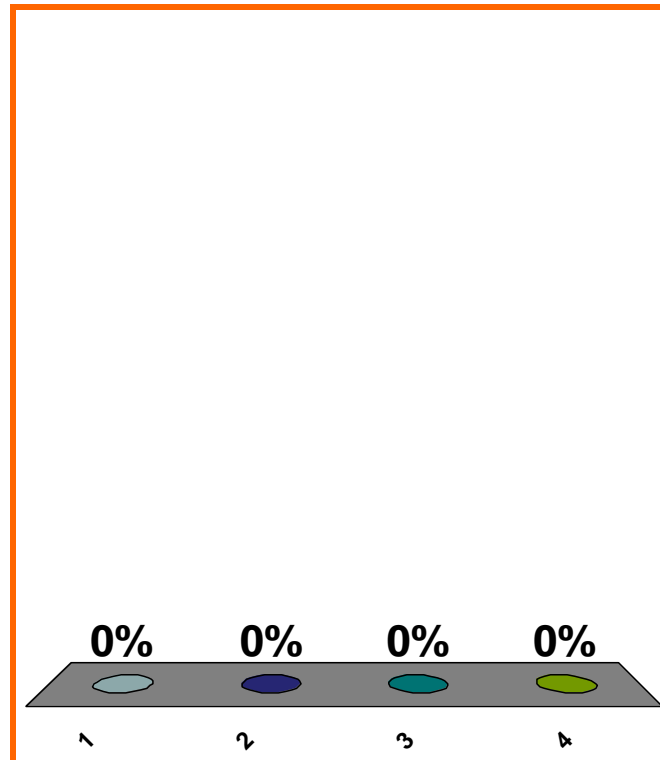
$$(a) \sum_{j=1}^n \left[\frac{1}{n} \right] \left[e^{1+(j/n)-(1/n)} \right]$$

n th rt endpt Riem. sum
for $\int_1^2 e^x dx$

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

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

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0590

0 pts

n th left endpt Riem. sum

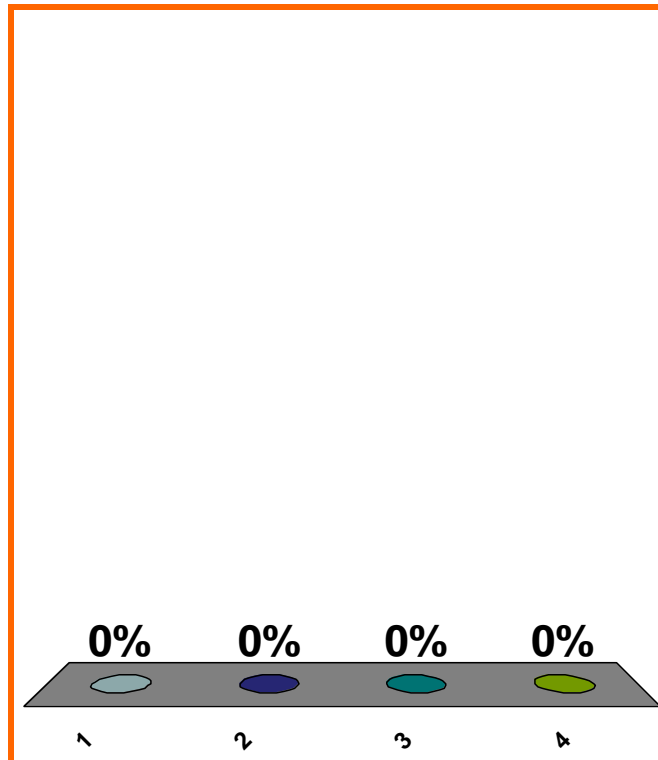
$$(a) \sum_{j=1}^n \left[\frac{1}{n} \right] \left[e^{1+(j/n)} \right]$$

for $\int_1^2 e^x dx$

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

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

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0590

0 pts

n th midpt Riem. sum

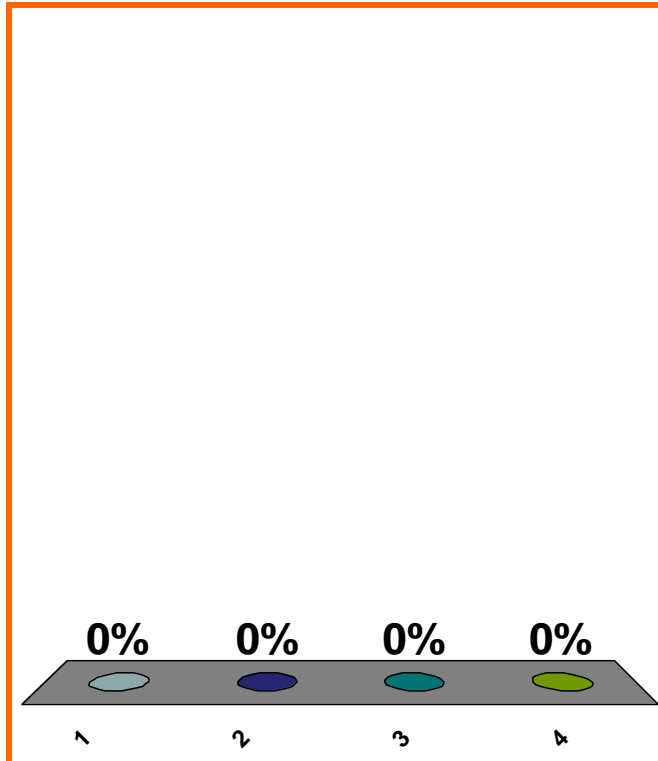
for $\int_1^2 e^x dx$

(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



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

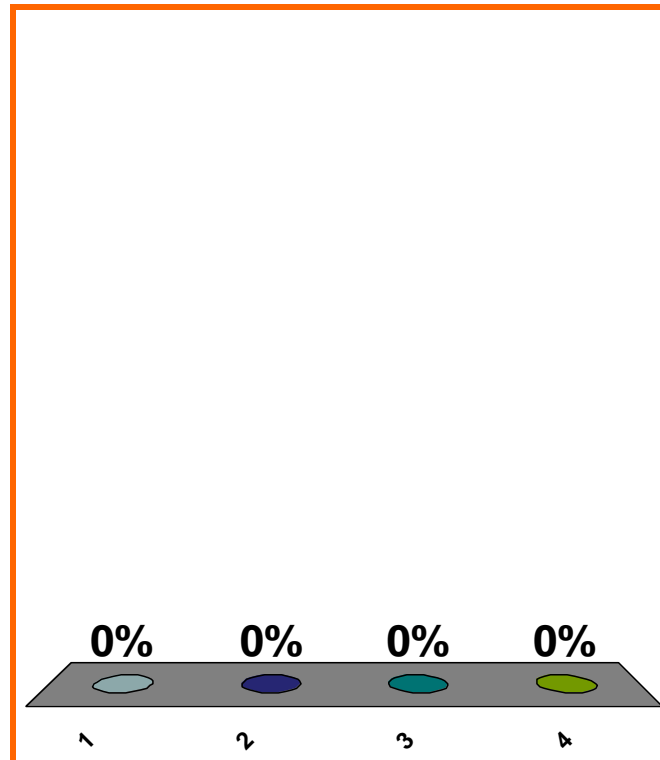
$$(a) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)} \right]$$

$$(b) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/n)} \right]$$

$$(c) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/(2n))} \right]$$

(d) none of the above

n th rt endpt Riem. sum
for $\int_1^4 e^x dx$



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

$$(a) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)} \right]$$

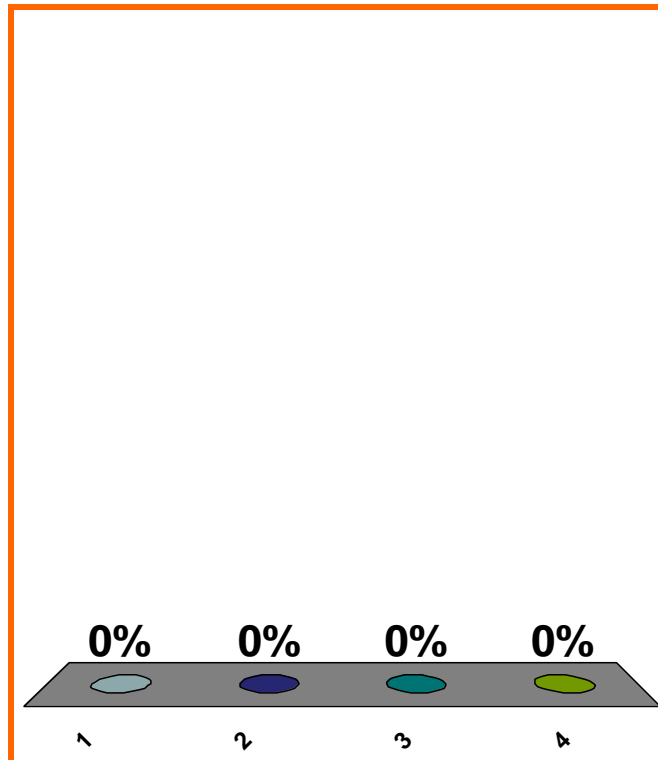
n th left endpt Riem. sum

for $\int_1^4 e^x dx$

$$(b) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/n)} \right]$$

$$(c) \sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/(2n))} \right]$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0590

10 pts

12

n th midpt Riem. sum

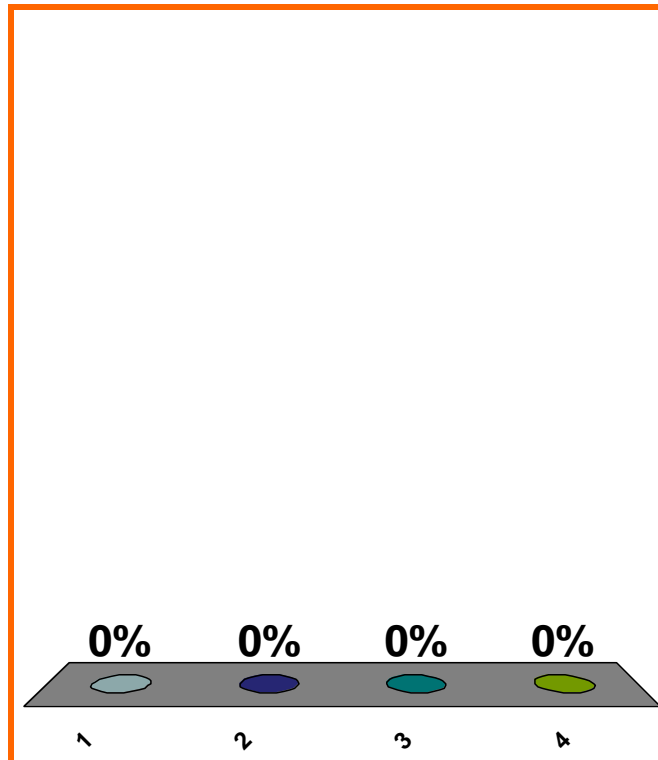
for $\int_1^4 e^x dx$

(a) $\sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)} \right]$

(b) $\sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/(2n))} \right]$

(c) $\sum_{j=1}^n \left[\frac{3}{n} \right] \left[e^{1+(3j/n)-(3/n)} \right]$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

$$(a) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n))^5 \right]$$

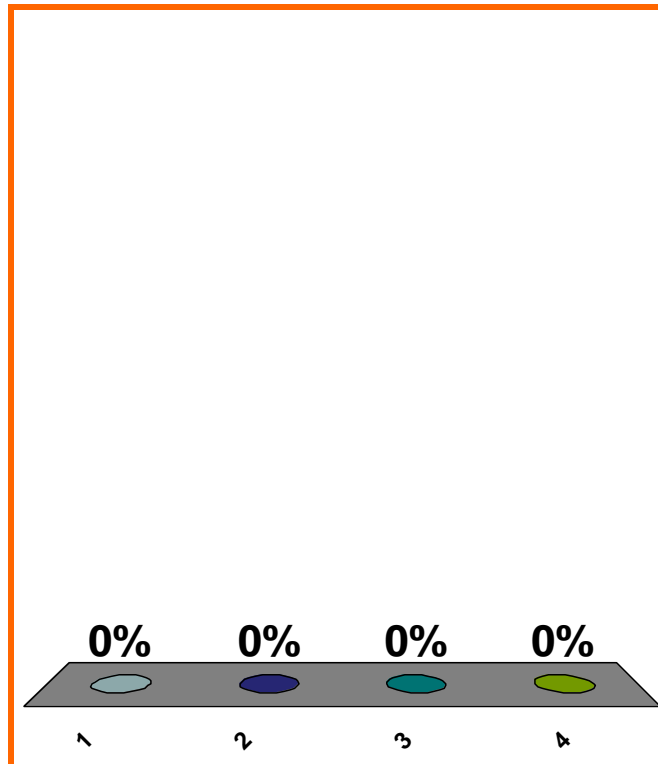
n th left endpt Riem. sum

for $\int_2^6 x^5 dx$

$$(b) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/n))^5 \right]$$

$$(c) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/(2n)))^5 \right]$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

$$(a) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n))^5 \right]$$

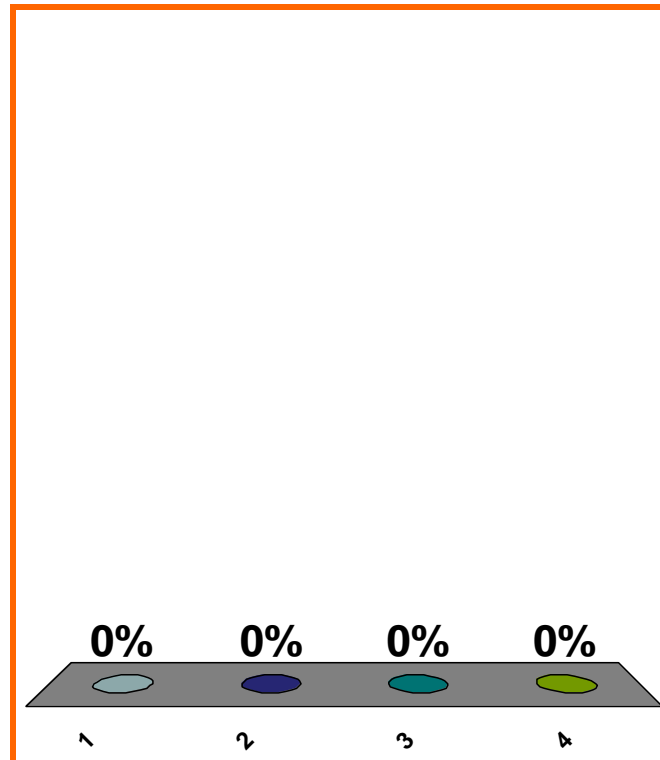
n th right endpt Riem. sum

$$\text{for } \int_2^6 x^5 dx$$

$$(b) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/n))^5 \right]$$

$$(c) \sum_{j=1}^n \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/(2n)))^5 \right]$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0590

10 pts

15

$$(a) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n))^5 \right]$$

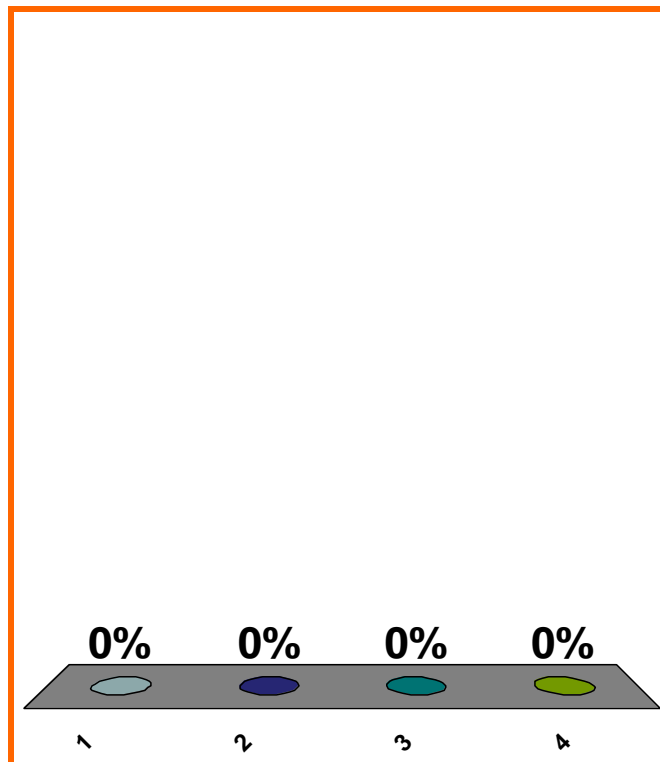
n th left endpt Riem. sum

for $\int_2^6 x^5 dx$

$$(b) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/n))^5 \right]$$

$$(c) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) + (4/(2n)))^5 \right]$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0590

10 pts

$$(a) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n))^5 \right]$$

n th right endpt Riem. sum

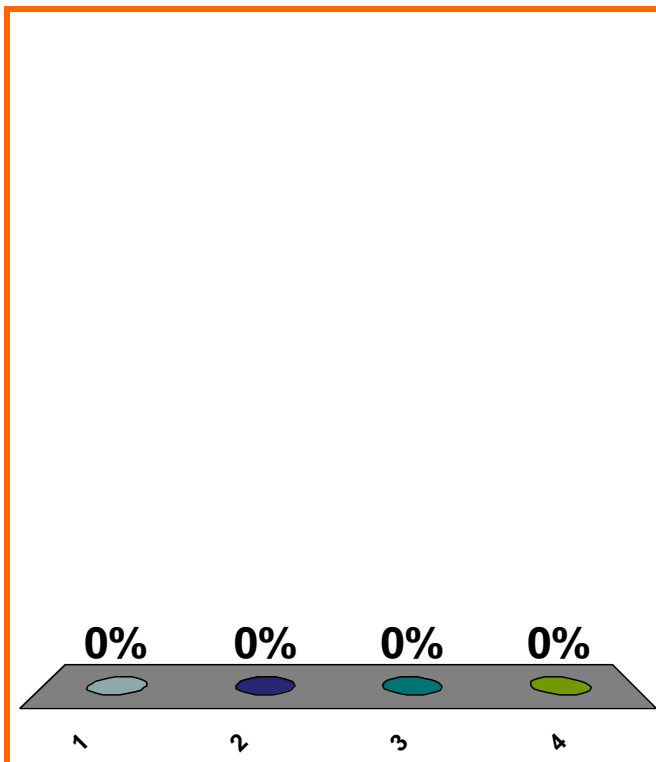
$$\text{for } \int_2^6 x^5 dx$$

$$(b) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/n))^5 \right]$$

$$(c) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) + (4/(2n)))^5 \right]$$

(d) none of the above

$$\sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) + (4/n))^5 \right]$$



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0590

0 pts

17

$$(a) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n))^5 \right]$$

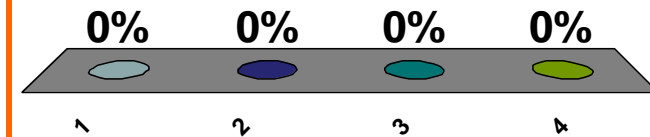
n th midpt Riem. sum

$$\text{for } \int_2^6 x^5 dx$$

$$(b) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) + (4/(2n)))^5 \right]$$

$$(c) \sum_{j=0}^{n-1} \left[\frac{4}{n} \right] \left[(2 + (4j/n) - (4/n))^5 \right]$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0590

10 pts

18

tangent line to $y = f(x)$ at $(2, 7)$

$$y - 7 = 8(x - 2)$$

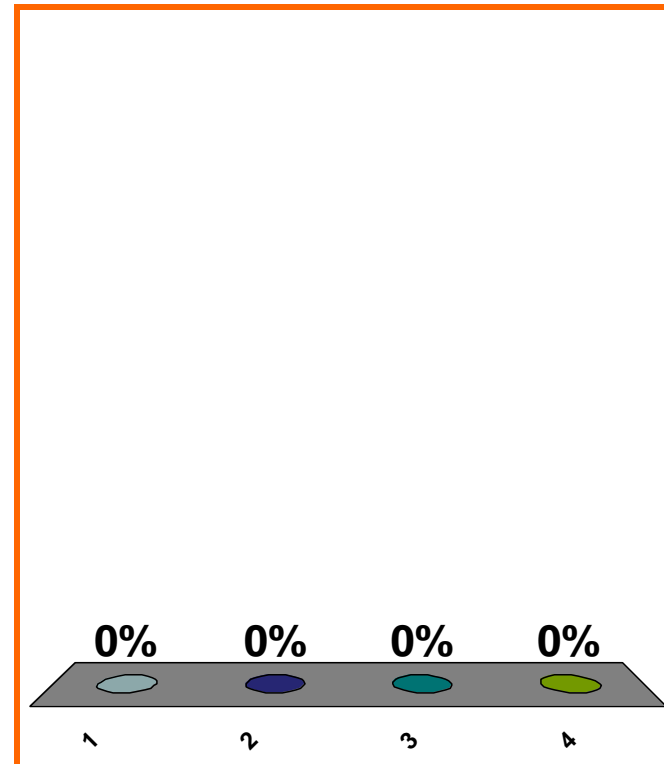
“linearization” of $f(x)$ at $x = 2$?

(a) 8

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

(c) $8(x - 2)$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

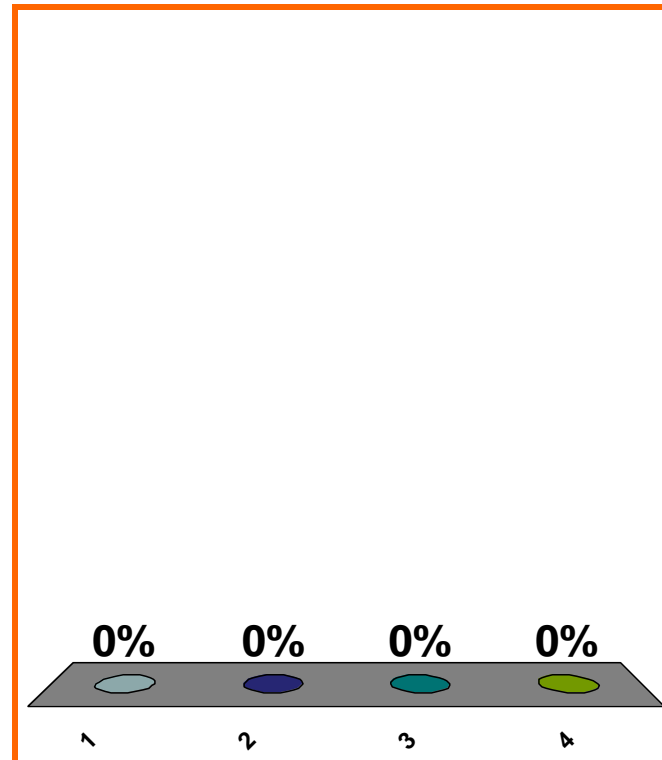
$f(5) = -2, \quad f'(5) = 39$
Linear approx. to $f(x)$
at $x = 5$?

(a) $-2 + 39(x - 5)$

(b) $39 - 2(x - 5)$

(c) $5x^2 + 39x - 2$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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Topic 0540

0 pts

20

$$g(9) = -3, \quad g'(9) = -8$$

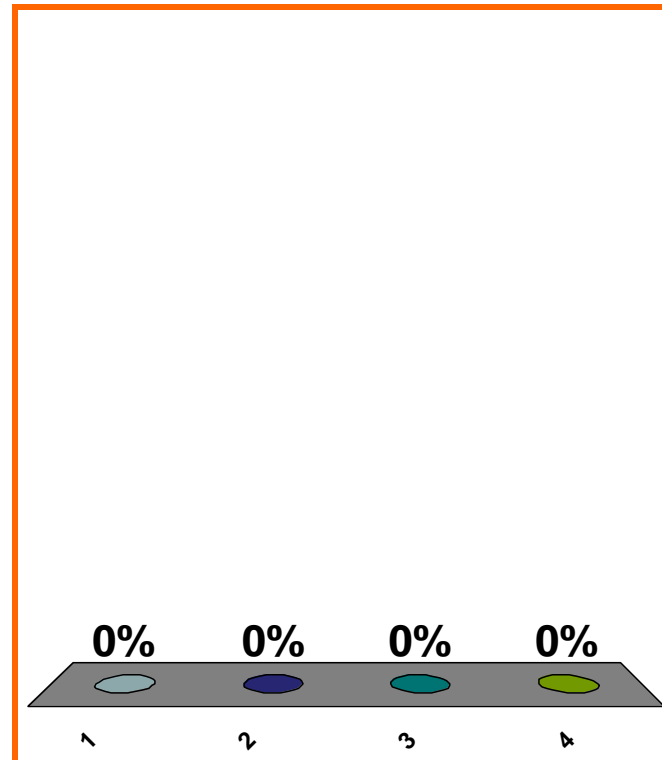
Linear approx. to $g(x)$
at $x = 9$?

(a) $-3 - 8(x - 9)$

(b) $-8 - 3(x - 9)$

(c) $9x^2 - 8x - 3$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0540

10 pts

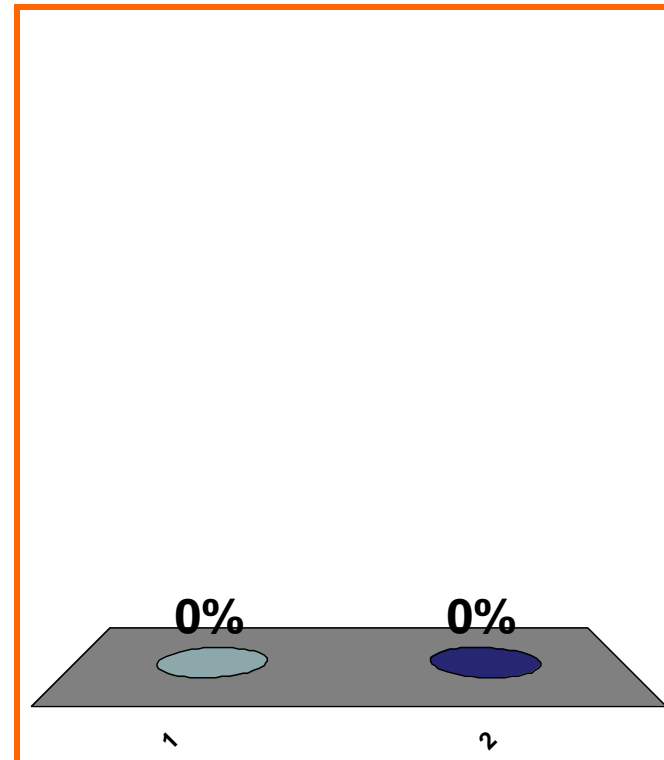
T or F:

$$f'(2) = 0, \quad f''(2) < 0$$

\Rightarrow f has a local max at 2

(a) True

(b) False



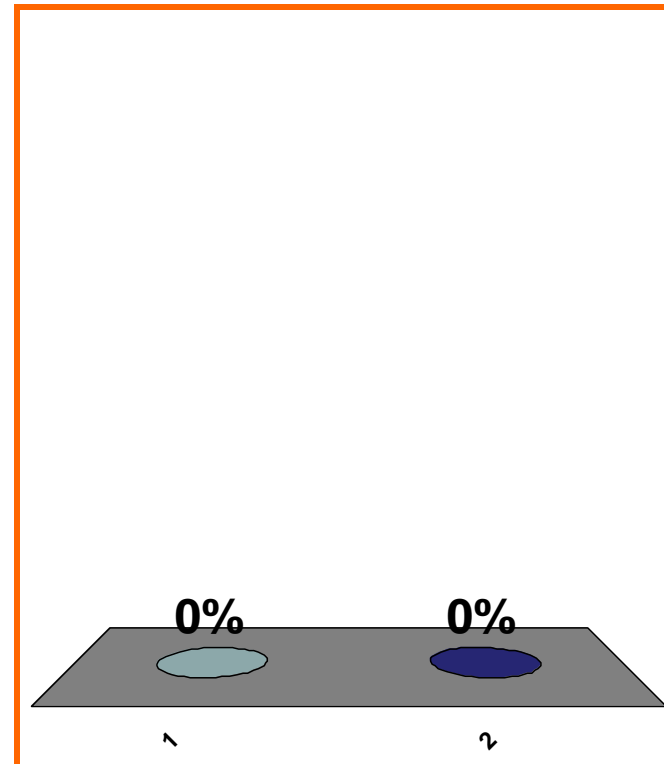
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

T or F: $f : \mathbb{R} \rightarrow \mathbb{R}$

f' pos on $(1, 2)$, $f'(2) = 0$, f' neg on $(2, 3)$
 $\Rightarrow f$ has a global max at 2

(a) True

(b) False



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Newton's method
for solving $e^{2x} + x = 4$:

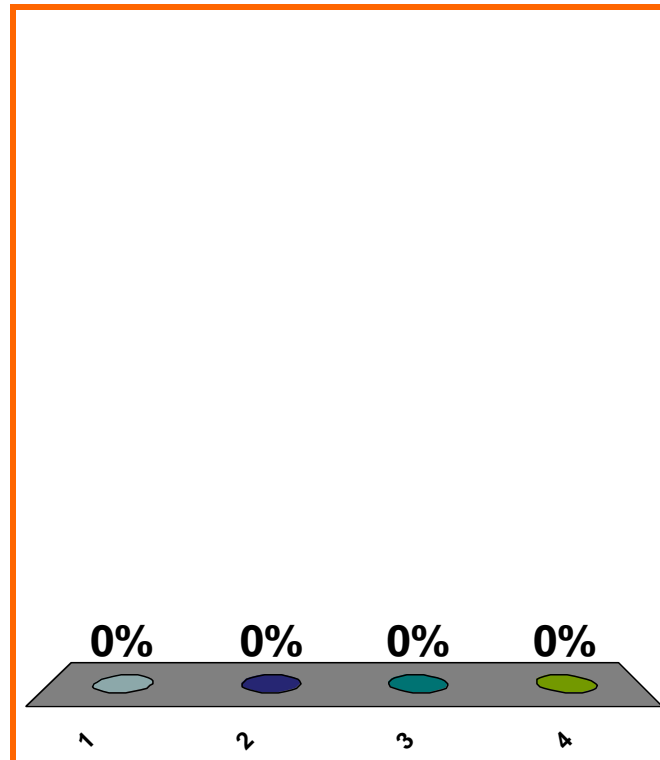
$$x_{n+1} = ??$$

$$(a) \quad x_n - \frac{e^{2x_n} + x_n - 4}{e^{2x_n} + 1}$$

$$(b) \quad x_n - \frac{e^{2x_n} + x_n}{e^{2x_n} + 1}$$

$$(c) \quad x_n - \frac{e^{2x_n} + x_n - 4}{2e^{2x_n} + 1}$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

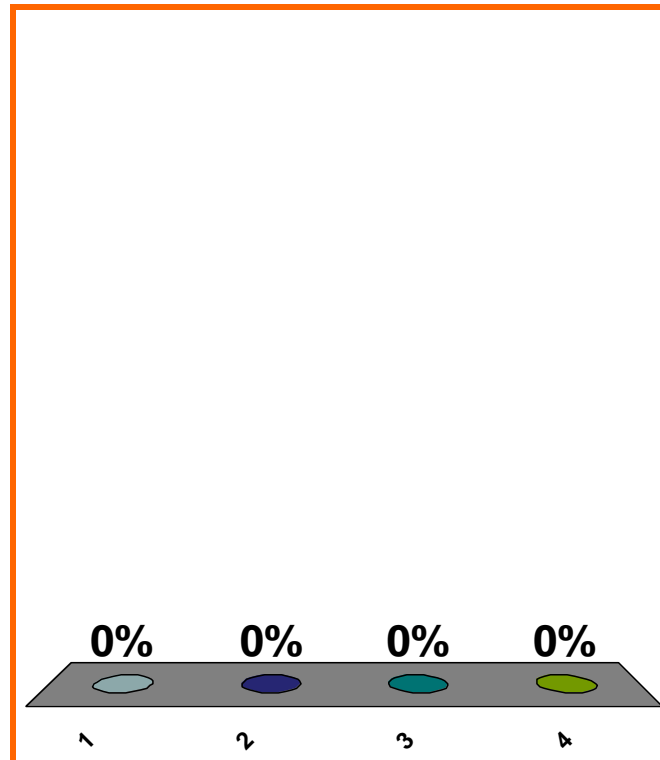
Newton's method formula
to solve $x^5 + x^3 = 4$.

$$(a) \quad x_{n+1} = x_n + \frac{x_n^5 + x_n^3}{5x_n^4 + 3x_n^2}$$

$$(b) \quad x_{n+1} = x_n - \frac{x_n^5 + x_n^3 - 4}{5x_n^4 + 3x_n^2}$$

$$(c) \quad x_{n+1} = x_n - \frac{x_n^5 + x_n^3}{5x_n^4 + 3x_n^2}$$

(d) none of the above



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

SAVE THE
SESSION
DATA

RETURN TO
PRESENTATION