

Calculus

M 2 April 2012

RESET THE
SESSION

SET THE
PARTICIPANT
LIST

PLUG IN THE
RECEIVER

New topics (see diary)

Topics covered are in bounds

Boxed answers agree with
TurningPoint answers

Points agree with
TurningPoint points

Points total to 100

Cover the look ahead

QUIZ
FOLLOWS

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

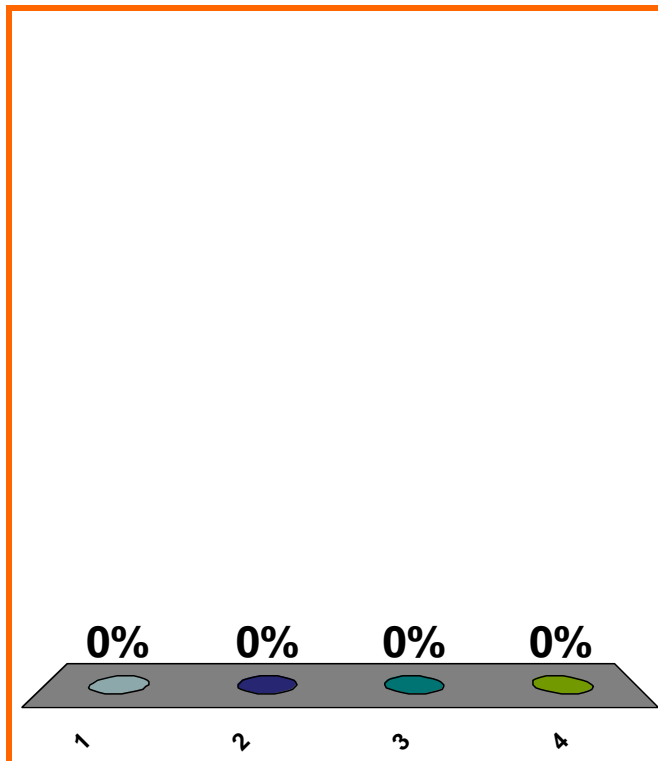
$$\int x^3 + 5^x dx = ??$$

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

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

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

(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

0 of 5

Topic 0570

20 pts

5

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

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

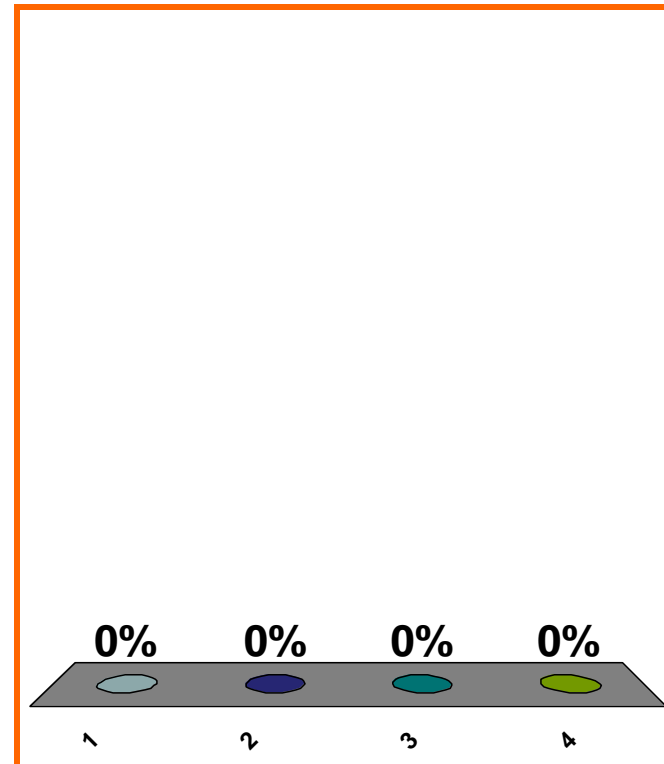
“linearization” of $f(x)$ at $x = 2$?

(a) 8

(b) $8(x - 2)$

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

(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
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0 of 5

Topic 0540

20 pts

$$f(5) = -2, \quad f'(5) = 23$$

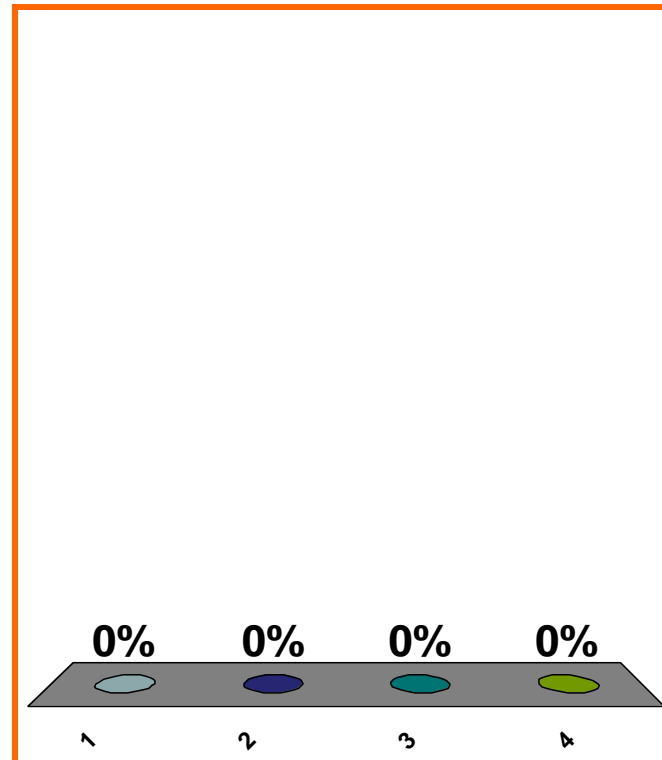
Linear approx. to $f(x)$
at $x = 5$?

(a) $23 - 2(x - 5)$

(b) $5x^2 + 23x - 2$

(c) $-2 + 23(x - 5)$

(d) none of the above



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Topic 0540

20 pts

7

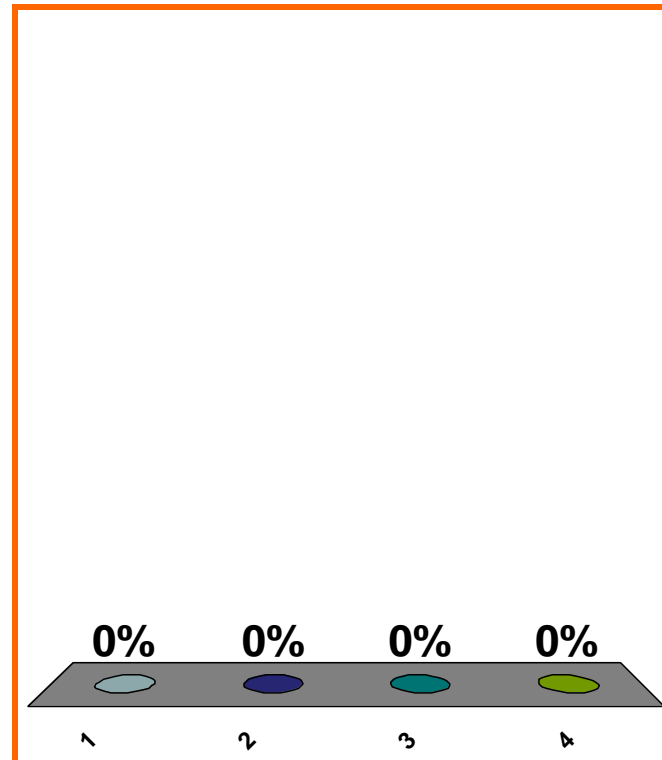
$g(7) = 4, \quad g'(7) = -8$
Linear approx. to $g(x)$
at $x = 7$?

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

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

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

(d) none of the above



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Topic 0540

20 pts

8

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

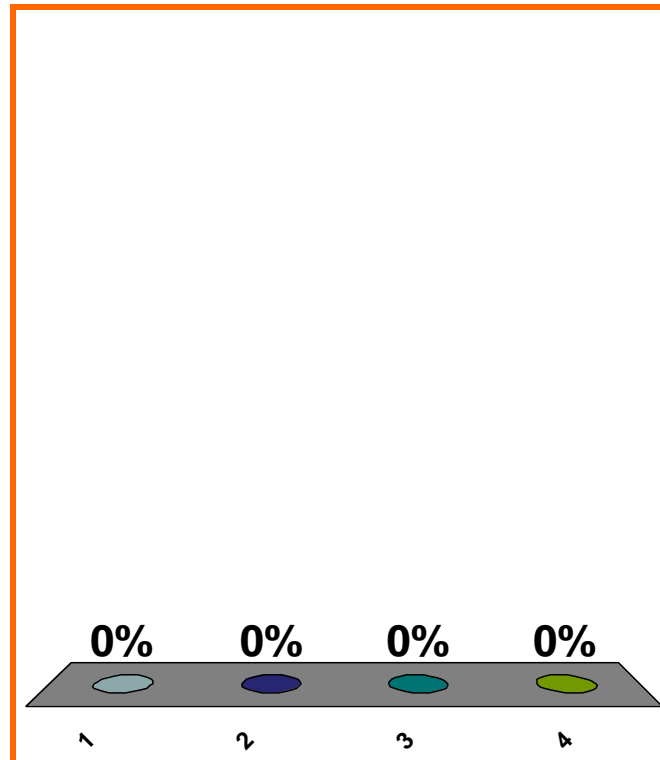
$$x_{n+1} = ??$$

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

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

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

(d) none of the above



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0 of 5

Topic 0530

20 pts

LOOK AHEAD

Riemann sums

$$\Delta \left[\sum_{j=1}^n (\cos(j^3 + j^2)) \right]$$

$$\frac{d}{dx} \left[\int_1^x (\cos(t^3 + t^2)) dt \right]$$

$$\frac{d}{dx} \left[\int_{x^4}^{e^x} (\cos(t^3 + t^2)) dt \right]$$

LOOK BACK (OPTIMIZATION)

We want to construct a box whose base length is 3 times the base width. The material used to build the top and bottom cost $\$10/\text{ft}^2$ and the material used to build the sides cost $\$6/\text{ft}^2$. If the box must have a volume of 50 ft^3 determine the dimensions that will minimize the cost to build the box.

$$e^{\ln x} = x \quad ?$$

$$\ln e^x = x \quad ?$$

$$x^2/x = x \quad ?$$

$$x/x^2 = 1/x \quad ?$$

SAVE THE
SESSION
DATA

RETURN TO
PRESENTATION