Calculus
F 5 April 2013

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

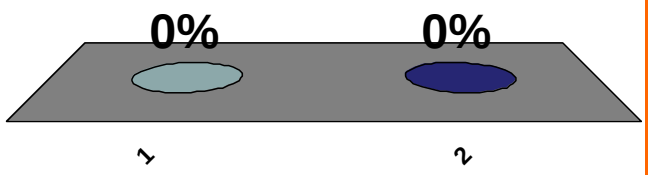
Topics covered are in bounds

QUIZ
FOLLOWS

$1 + 1 = ??$

(a) 1

(b) 2



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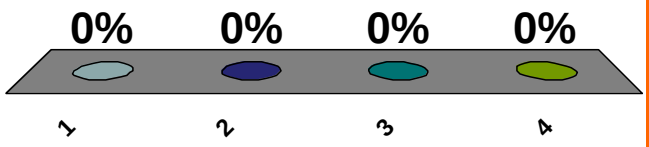
line's slope $= 8$
goes through $(2, 7)$
equation?

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

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

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

(d) none of the above



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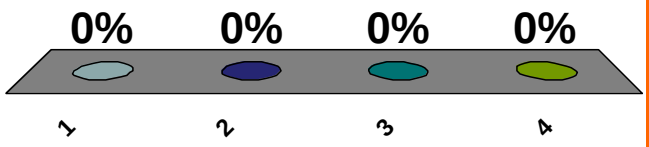
line's slope $= 8$
goes through $(2, 7)$
equation?

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

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

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

(d) none of the above



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

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

"linearization" of $f(x)$ at $x = 2$?

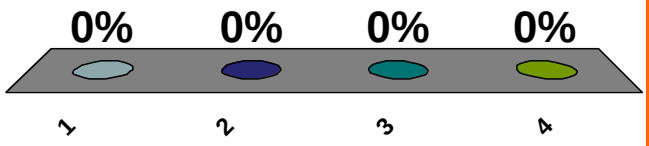
(a) 8

(b) 7

(c) $8(x - 2)$

(d) none of the above

Correct answer: $7 + 8(x - 2)$



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$f(5) = -2, \quad f'(5) = 39$

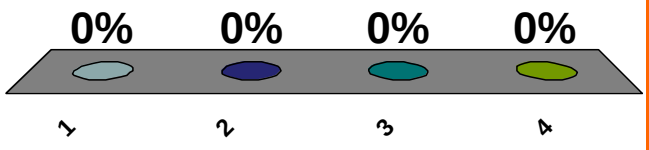
Linear approx. to $f(x)$ at $x = 5$?

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

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

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

(d) none of the above



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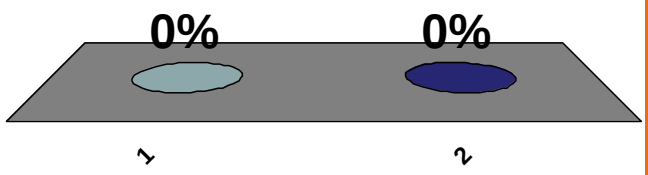
T or F:

If $f'' < 0$ on I,
then f is cc dn on I.

(a) True

(b) False



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Topic 0470

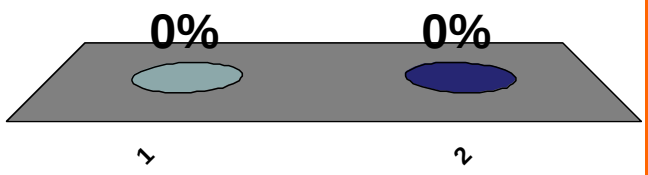
10 pts

T or F:

Any global max or global min is at a critical number.

(a) True

(b) False



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Topic 0450

10 pts

END
QUIZ

END
CLASS

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

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

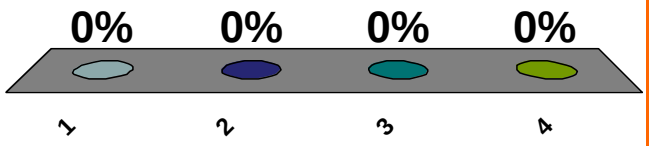
"linearization" of $f(x)$ at $x = 2$?

(a) $8(x - 2)$

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

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

(d) none of the above



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

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

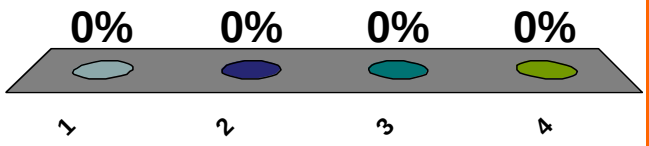
"linearization" of $f(x)$ at $x = 2$?

(a) 8

(b) $8(x - 2)$

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

(d) none of the above



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

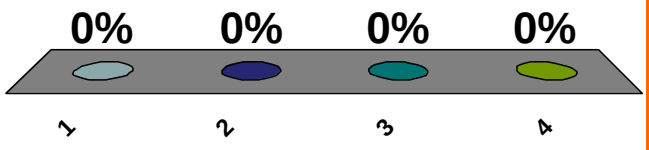
Linear approx. to $f(x)$ at $x = 7$?

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

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

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

(d) none of the above



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

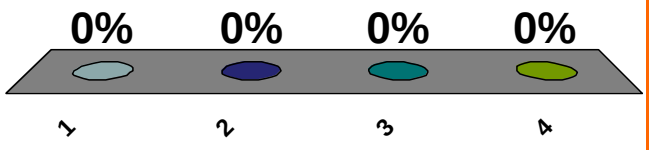
Linear approx. to $f(x)$ at $x = 7$?

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

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

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

(d) none of the above



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$f(5) = -2, \quad f'(5) = 39$

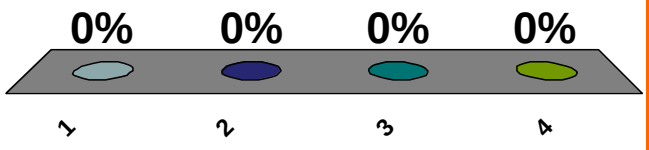
Linear approx. to $f(x)$ at $x = 5$?

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

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

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

(d) none of the above



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$g(2) = -3, \quad g'(2) = 5$

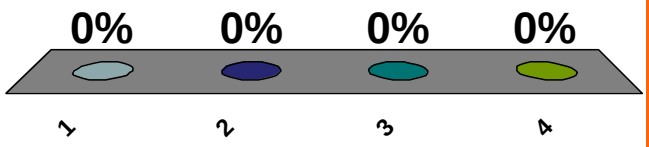
Linear approx. to $g(x)$ at $x = 2$?

(a) $5 - 3(x - 2)$

(b) $-3 + 5(x - 2)$

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

(d) none of the above



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

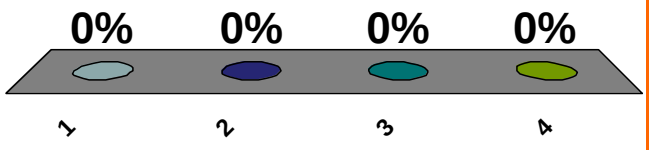
Linear approx. to $g(x)$ at $x = 9$?

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

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

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

(d) none of the above



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

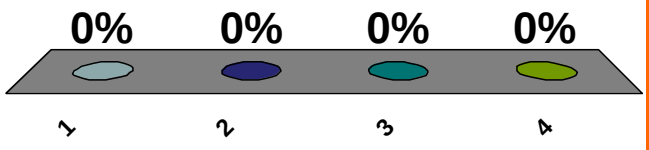
Linear approx. to $f(x)$ at $x = 5$?

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

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

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

(d) none of the above



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$g(9) = 4, \quad g'(9) = -8$

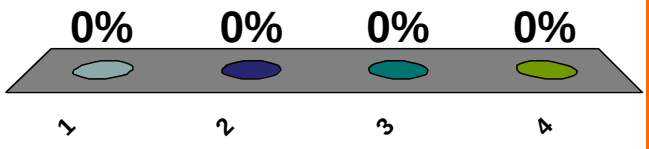
Linear approx. to $g(x)$ at $x = 9$?

(a) $-8 + 4(x - 9)$

(b) $4 - 8(x - 9)$

(c) $9x^2 + 4x - 8$

(d) none of the above



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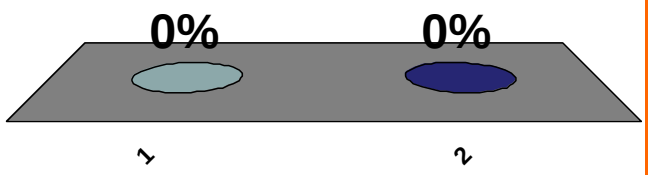
T or F:

At any critical number is a local max or a local min.

(a) True

(b) False



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Topic 0450

0 pts

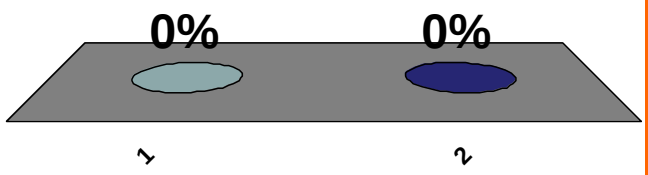
T or F:

f incr. on $(2,3)$

$\Rightarrow$ $f' \geq 0$ on $(2,3)$

(a) True

(b) False



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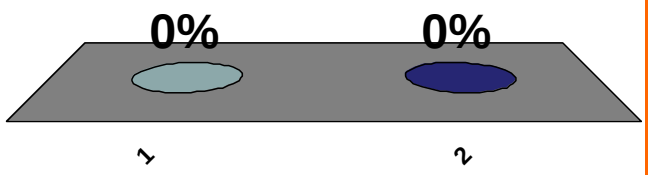
T or F:

If f is decreasing on I, then $f' < 0$ on I.

(a) True

(b) False



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Topic 0460

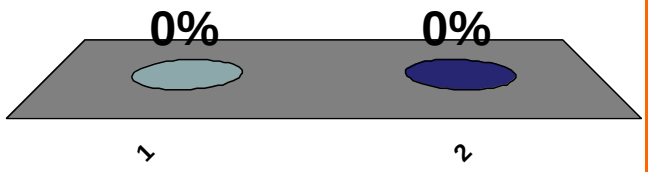
0 pts

T or F:

If f is cc up on I,
then $f'' > 0$ on I.

(a) True

(b) False



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

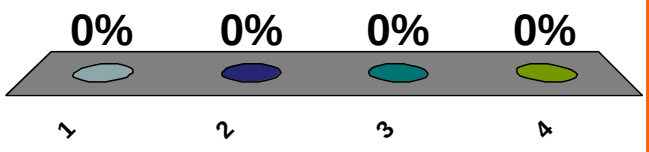
$x_{n+1} = ??$

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

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

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

(d) none of the above



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

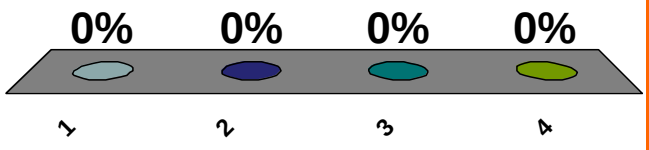
$x_{n+1} = ??$

(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



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Newton's method for solving $f(x) = 5$:

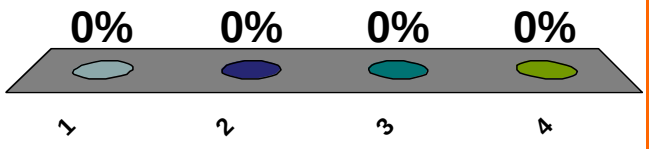
$$x_{n+1} = \text{??}$$

(a) $x_n - \dfrac{[f(x_n)] - 5}{f'(x_n)}$

(b) $x_n - \dfrac{[f(x_n)] - 1}{f'(x_n)}$

(c) $x_n - \dfrac{f'(x_n)}{f(x_n)}$

(d) none of the above



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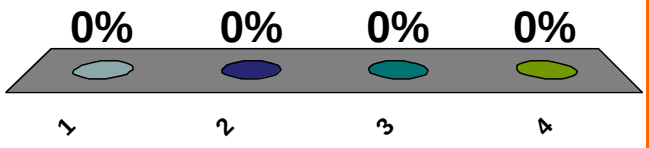
Newton's method formula to solve $2x^3 - 4x + 8 = 0$.

(a) $x_{n+1} = x_n - \dfrac{2x_n^3 - 4x_n + 8}{6x_n^2 - 4}$

(b) $x_{n+1} = x_n + \dfrac{6x_n^2 - 4}{2x_n^3 - 4x_n + 8}$

(c) $x_{n+1} = x_n - \dfrac{6x_n^2 - 4}{2x_n^3 - 4x_n + 8}$

(d) none of the above



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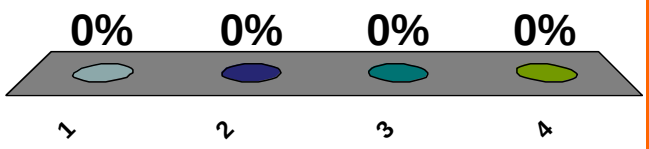
Newton's method formula to solve $2e^x + x^2 - 8 = 0$.

(a) $x_{n+1} = x_n - \dfrac{2x_n e^{x_n - 1} + 2x_n}{2e^{x_n} + x_n^2 - 8}$

(b) $x_{n+1} = x_n - \dfrac{2e^{x_n} + x_n^2 - 8}{2x_n e^{x_n - 1} + 2x_n}$

(c) $x_{n+1} = x_n - \dfrac{2e^{x_n} + x_n^2 - 8}{2e^{x_n} + 2x_n}$

(d) none of the above



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Newton's method for solving $e^x + x = 1$:

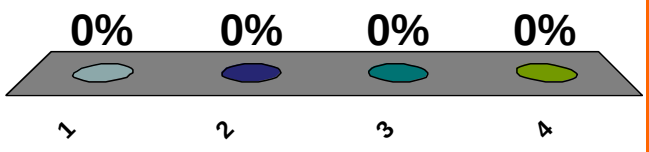
$$x_{n+1} = \text{??}$$

(a) $x_n - \dfrac{e^{x_n} + x_n}{e^{x_n} + 1}$

(b) $x_n - \dfrac{e^{x_n} + x_n - 1}{e^{x_n} + 1}$

(c) $x_n - \dfrac{e^{x_n} + 1}{e^{x_n} + x_n}$

(d) none of the above



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Newton's method for solving $e^x + x = 1$:

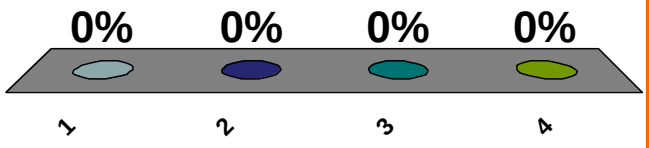
$$x_{n+1} = \text{??}$$

(a) $x_n - \dfrac{e^{x_n} + x_n - 1}{e^{x_n} + 1}$

(b) $x_n - \dfrac{e^{x_n} + x_n}{e^{x_n} + 1}$

(c) $x_n - \dfrac{e^{x_n} + 1}{e^{x_n} + x_n}$

(d) none of the above



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21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

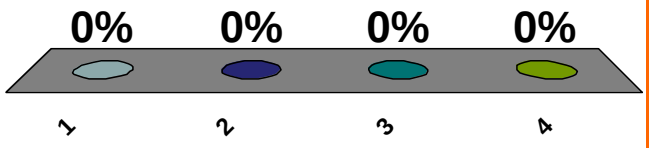
Newton's method formula to solve $(\cos x) + x^3 - 4 = 0$.

(a) $x_{n+1} = x_n - \dfrac{(\sin x_n) + 3x_n^2}{(\cos x_n) + x_n^3 - 4}$

(b) $x_{n+1} = x_n - \dfrac{(\cos x_n) + x_n^3 - 4}{(\sin x_n) + 3x_n^2}$

(c) $x_{n+1} = x_n - \dfrac{(\cos x_n) + x_n^3 - 4}{-(\sin x_n) + 3x_n^2}$

(d) none of the above



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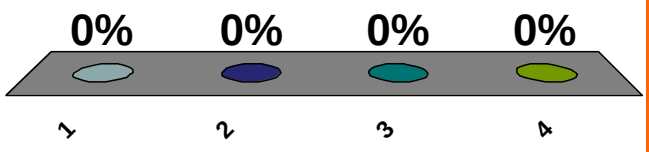
Newton's method formula to solve $x^3 + x^2 - 4 = 0$.

(a) $x_{n+1} = x_n - \dfrac{3x_n^2 + 2x_n}{x_n^3 + x_n^2 - 4}$

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

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

(d) none of the above



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

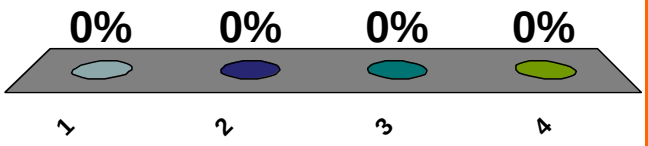
(a) $x_{n+1} = x_n + \dfrac{x_n^5 + x_n^3}{5x_n^4 + 3x_n^2}$

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

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

(d) none of the above

Correct: $x_{n+1} = x_n - \dfrac{x_n^5 + x_n^3 - 4}{5x_n^4 + 3x_n^2}$



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Newton's method for solving $f(x) = 1$:

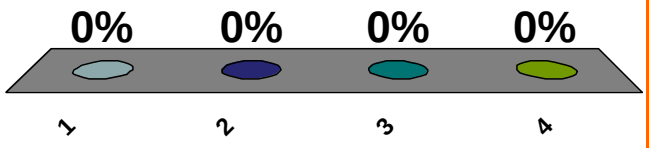
$$x_{n+1} = \text{??}$$

(a) $x_n - \dfrac{f(x_n)}{f'(x_n)}$

(b) $x_n - \dfrac{[f(x_n)] - 1}{f'(x_n)}$

(c) $x_n - \dfrac{f'(x_n)}{f(x_n)}$

(d) none of the above



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Topic 0530

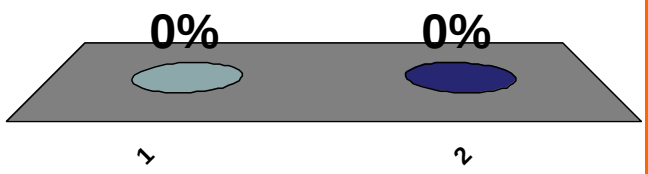
0 pts

T or F:

Any global max is a local max.

(a) True

(b) False



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Topic 0450

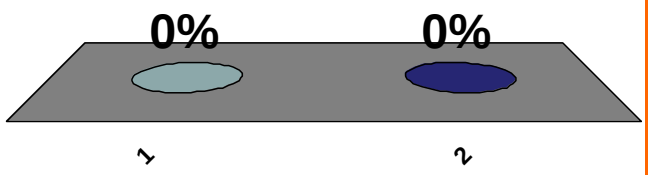
0 pts

T or F:

If $f' > 0$ on I,
then f is increasing on I.

(a) True

(b) False



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Topic 0460

0 pts

SAVE THE SESSION DATA

RETURN TO PRESENTATION