Calculus
M 28 January 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

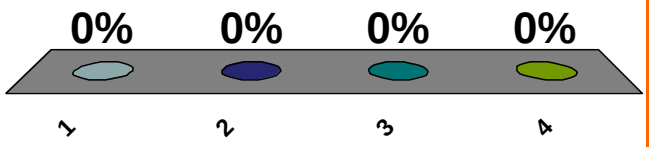
$$\lim_{x \to 0} \frac{2x^3 + 7x}{x} = ??$$

(a) 7

(b) 2

(c) 0

(d) none of the above



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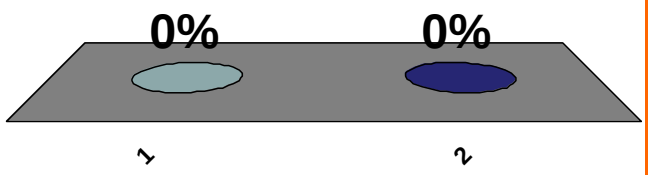
21	22	23	24	25	26	27	28	29	30										

T or F: A tangent line can cross through the graph of a function, at the point of tangency, and then cross through several more times.

(a) True

(b) False



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Topic 0140

0 pts

$$\ln(x+y) = ??$$

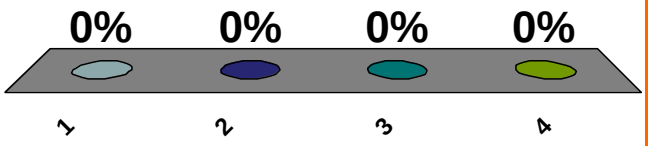
(a) $(\ln x) + (\ln y)$

(b) $(\ln x)(\ln y)$

(c) $(\ln x) - (\ln y)$

(d) none of the above

Correct ans: no simplification



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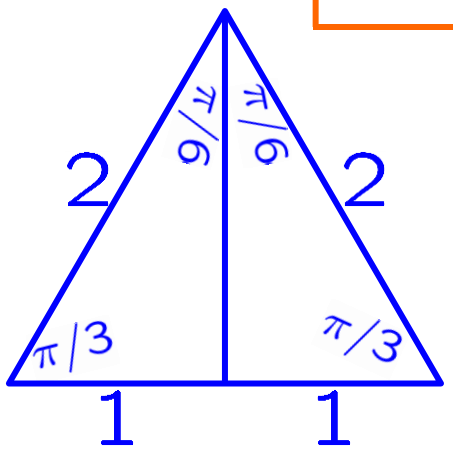


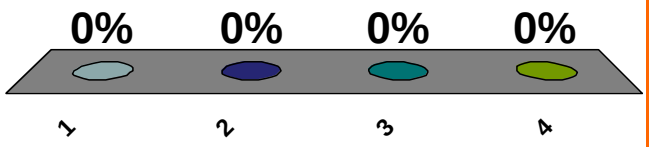
$\text{Sin}(\pi/6) = ??$

(a) $\sqrt{2}/2$

(b) $\sqrt{3}/2$

(c) $1/2$

(d) none of the above



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Topic 0090

0 pts

END
QUIZ

END
CLASS

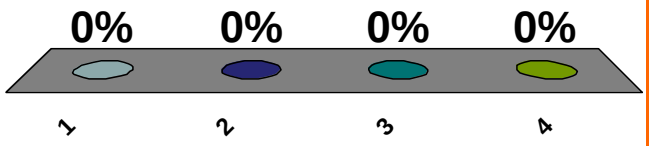
$$\lim_{x \to \infty} f(x) = -\infty$$

(a) x very pos $\Rightarrow$ $f(x)$ very neg

(b) x very neg $\Rightarrow$ $f(x)$ very pos

(c) $x \approx 0,\ x \neq 0$ $\Rightarrow$ $f(x)$ very neg

(d) none of the above



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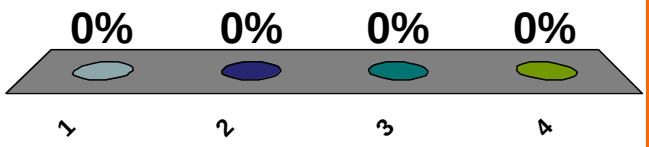
$$\lim_{x \to 2^-} f(x) = -\infty$$

(a) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very pos

(b) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very neg

(c) $x \approx 2,\ x < 2 \quad \Rightarrow \quad f(x)$ very neg

(d) none of the above



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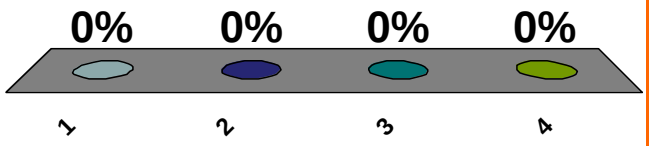
$$\lim_{x \to 2} f(x) = -\infty$$

(a) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very neg

(b) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very pos

(c) $x \approx 2,\ x < 2 \quad \Rightarrow \quad f(x)$ very neg

(d) none of the above



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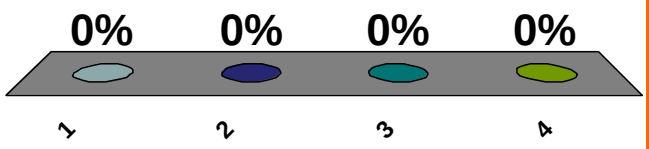
(a) $x \approx 2 \quad \Rightarrow \quad f(x) \approx 7$

$$\lim_{x \to 2} f(x) = 7$$

(b) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x) \approx 7,\ f(x) \neq 7$

(c) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x) \approx 7$

(d) none of the above



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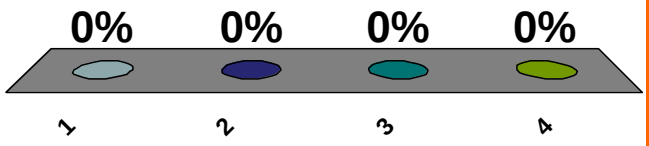
(a) $x \approx 2 \quad \Rightarrow \quad f(x)$ very neg

$$\lim_{x \to 2} f(x) = -\infty$$

(b) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very neg

(c) $x \approx 2,\ x \neq 2 \quad \Rightarrow \quad f(x)$ very pos

(d) none of the above



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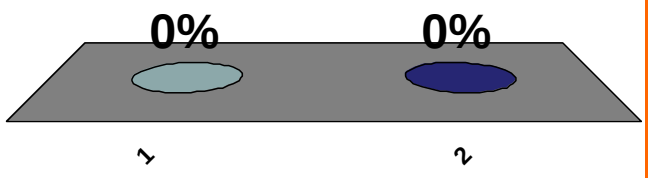
$$\forall x \in \mathbb{R}, \quad \frac{3x^3 + 2x}{x} = 3x^2 + 2$$

(a) True

(b) False



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Topic 0140

0 pts

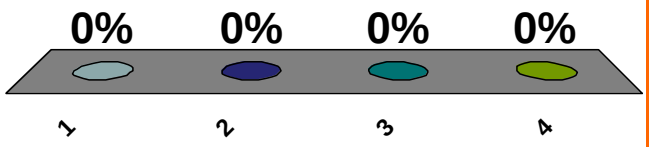
$$\frac{3x^3 + 2x}{x} \text{ is } \ldots$$

(a) a polynomial in x

(b) rational in x

(c) transcendental in x

(d) none of the above



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$$\left[\frac{3x^3+2x}{x}\right]_{x:\to 0} = ??$$

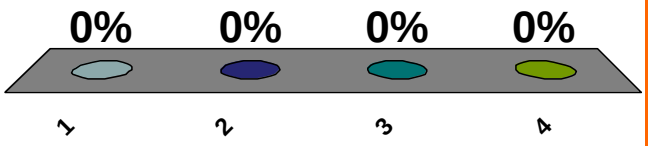
(a) 0

(b) 2

(c) 3

(d) none of the above

Correct answer: DNE



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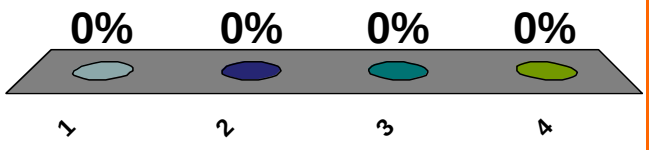
$$\lim_{x \to 0} \frac{3x^3 + 2x}{x} = ??$$

(a) 0

(b) 2

(c) 3

(d) none of the above



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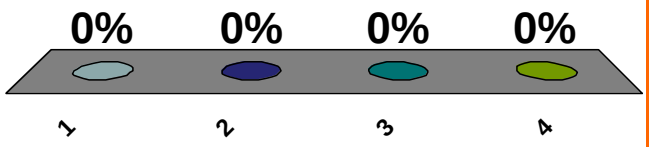
distance from 9 to 7?

(a) 2

(b) −2

(c) 4

(d) none of the above



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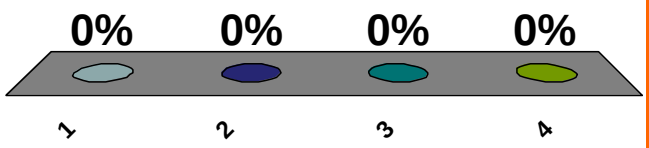
distance from x to 5?

(a) $5 - x$

(b) $|5 - x|$

(c) $x - 5$

(d) none of the above



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distance from a to b?

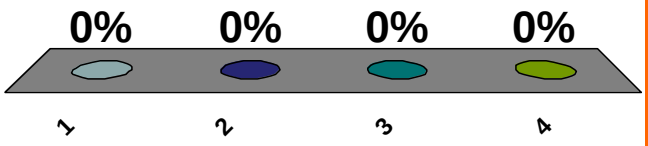
(a) $a - b$

(b) $b - a$

(c) $a + b$

(d) none of the above

Correct answer: $|a - b|$



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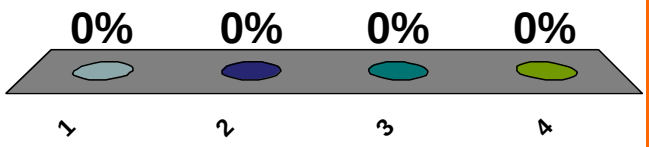
To get graph of $y^2 = \sin(x - \pi)$,
move graph of $y^2 = \sin(x)$ . . .

(a) right π

(b) left π

(c) down π

(d) none of the above



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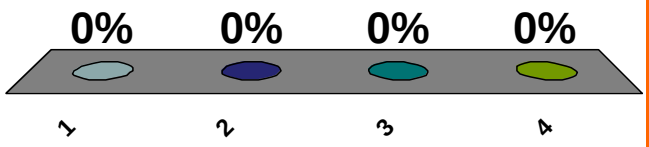
$\arcsin(1/2) = ??$

(a) $\pi/3$

(b) $\pi/4$

(c) $\pi/6$

(d) none of the above



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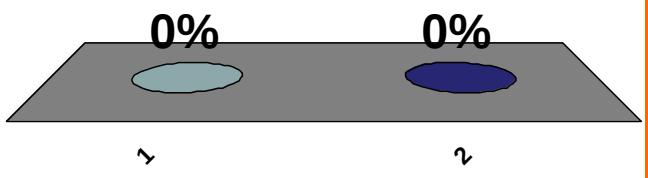
T or F: $\dfrac{x^9}{x^4} = x^5$

(a) True

(b) False



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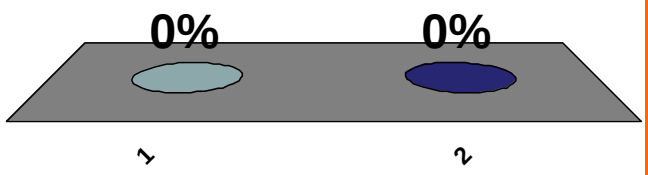
T or F: $x^0 = 1$

(a) True

(b) False



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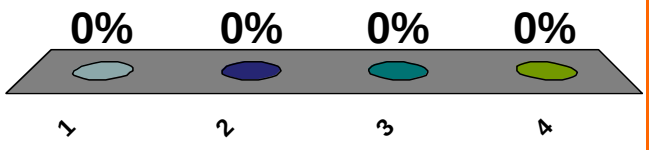
Quartic coefficient in $3x^5 + x^4 - x^3 + 8x + \pi$

(a) 1

(b) 3

(c) -1

(d) none of the above



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Leading coefficient in

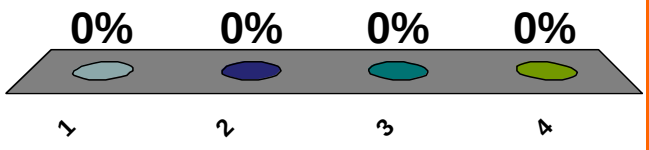
$$3x^5 + x^4 - x^3 + 8x + \pi$$

(a) 1

(b) 3

(c) -1

(d) none of the above



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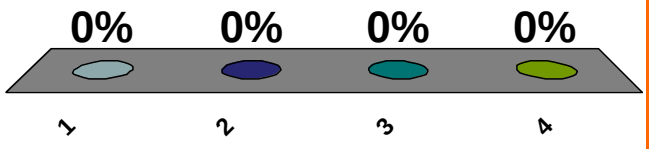
$$(5q^3 - 2q + 4)(2q + 7) + (q^3)(2q^7 - 9q + 4)$$

(a) a polynomial in q

(b) rational, nonpolynomial in q

(c) transcendental in q

(d) none of the above



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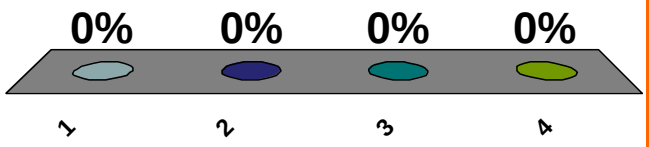
$$\frac{5q^3 - 2q + 4}{2q + 7} + \frac{(q^3 + 4)(2q - 3)}{2q^7 - 9q + 4}$$

(a) a polynomial in q

(b) rational, nonpolynomial in q

(c) transcendental in q

(d) none of the above



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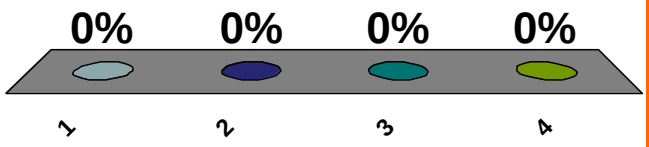
$$\sin\left(\frac{3t^2+5t-1}{2t^3+t^2-1}\right)$$

(a) a polynomial in t

(b) rational, nonpolynomial in t

(c) transcendental in t

(d) none of the above



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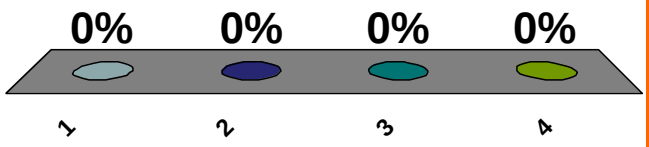
$x^2 + 3\sqrt{x} + 1$ is ??

(a) polynomial

(b) rational, not polynomial

(c) algebraic, not rational

(d) none of the above



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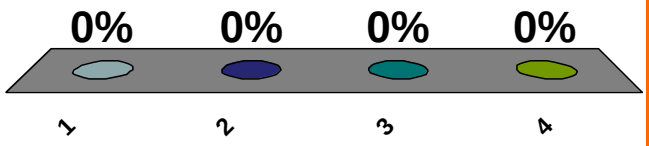
$$\frac{2x^3 - x + 5}{x^2 + 4x + 1} \text{ is ??}$$

(a) polynomial

(b) rational, not polynomial

(c) algebraic, not rational

(d) none of the above



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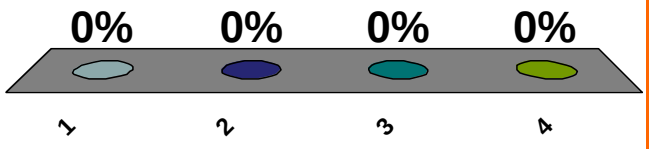
$\frac{1}{x}$ is ??

(a) polynomial

(b) rational, not polynomial

(c) algebraic, not rational

(d) none of the above



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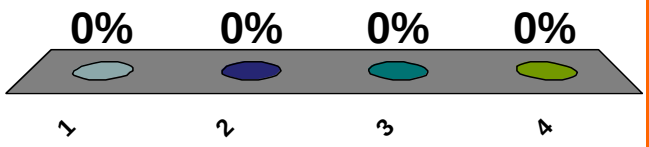
$$\frac{3x^3 + 2x}{x} \text{ is } \ldots$$

(a) a polynomial in x

(b) rational in x

(c) transcendental in x

(d) none of the above



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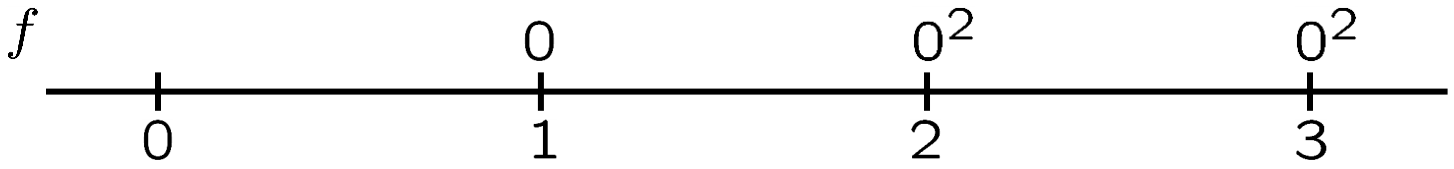
max interval of nonneg. for f, if $f(x) = (x-1)(x-2)^2(x-3)^2$.

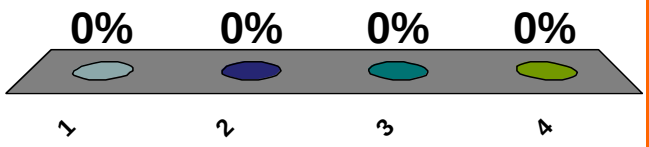


(a) $[0, \infty)$

(b) $[1, \infty)$

(c) $[2, \infty)$

(d) none of the above



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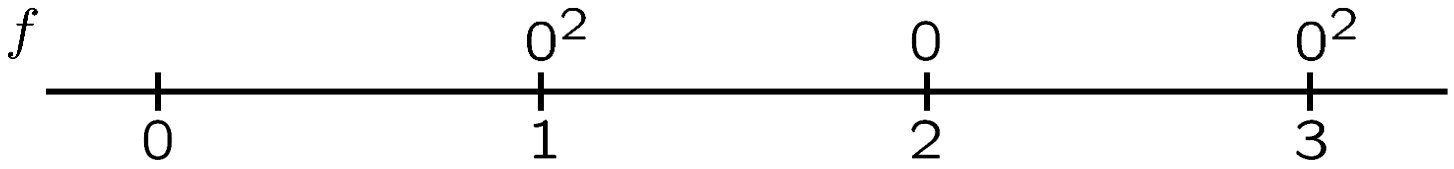
21	22	23	24	25	26	27	28	29	30										

max interval of nonpos. for f, if $f(x) = -(x-1)^2(x-2)(x-3)^2$.

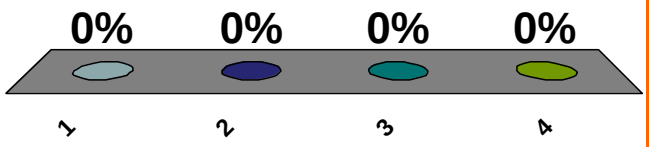


(a) $[0, \infty)$

(b) $[1, \infty)$

(c) $[2, \infty)$

(d) none of the above



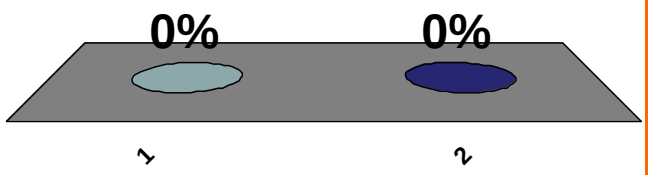
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30										

T or F:

$$\forall x \in \mathbb{R},\ \sqrt{x^2} = x$$

(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										

0 of 5

Topic 0050

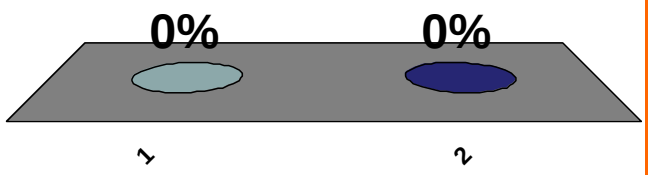
0 pts

T or F:

$$\forall x \in \mathbb{R},\ \sqrt{x^2} = |x|$$

(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										

0 of 5

Topic 0050

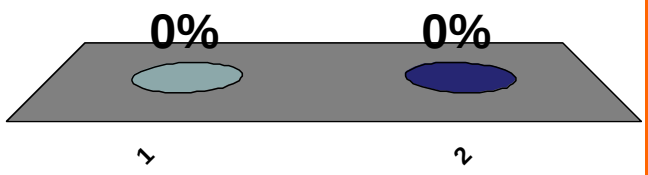
0 pts

T or F:

$$\forall x < 0,\ \sqrt{x^2} = -x$$

(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										

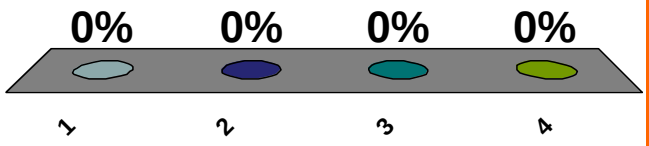
$$\triangle \left[\sum_{j=1}^{n} (5j^3 + 2j - 1) \right]$$

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

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

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

(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										

SAVE THE SESSION DATA

RETURN TO PRESENTATION