

# Calculus

W 30 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

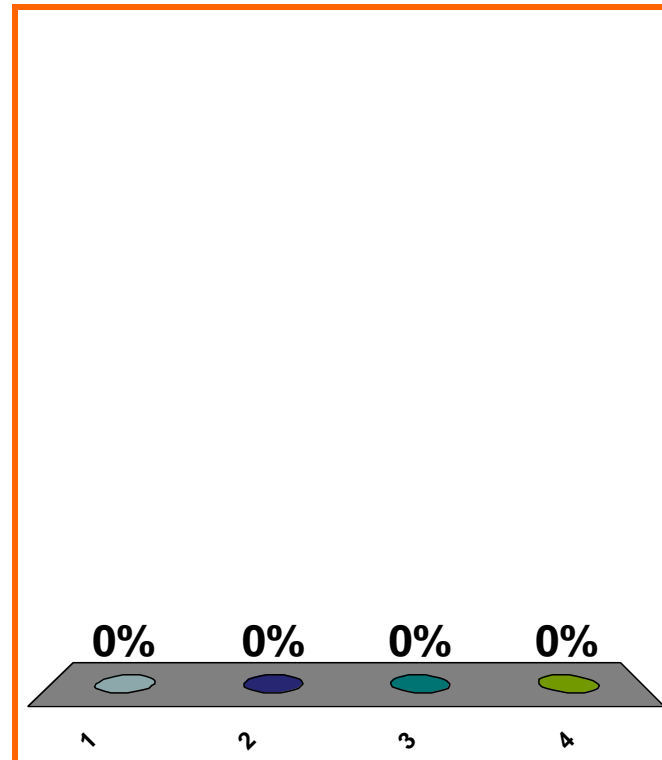
$$\lim_{x \rightarrow 5} (3x^3 - 2x + 8)$$

(a)  $(3)(5^3) - (2)(5) + 8$

(b)  $-\infty$

(c)  $\infty$

(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	31	32	33	34	35	36	37	38	39	40

0 of 5

Topic 0190

0 pts

5

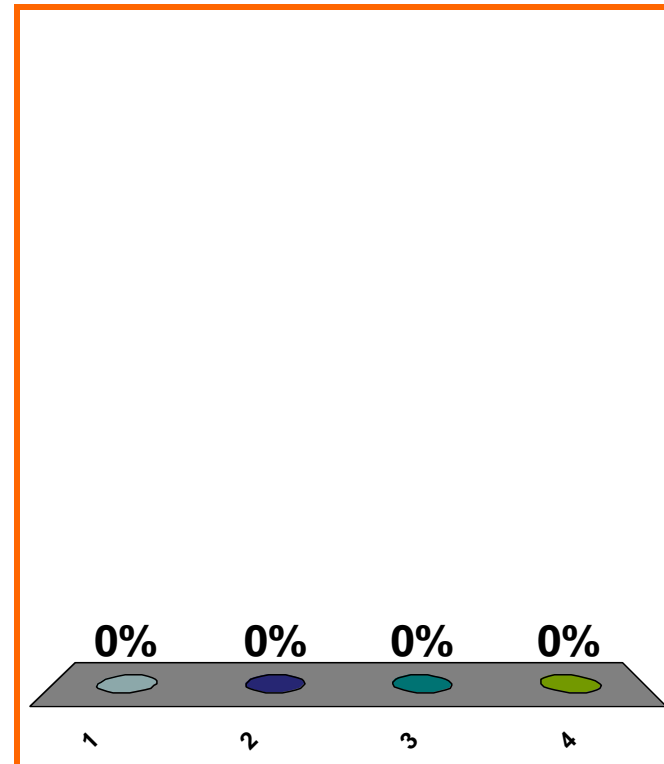
$$\lim_{x \rightarrow 5} \left( \frac{3x^3 - 2x + 8}{x - 4} \right)$$

(a)  $(3)(5^3) - (2)(5) + 8$

(b)  $-\infty$

(c)  $\infty$

(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	31	32	33	34	35	36	37	38	39	40

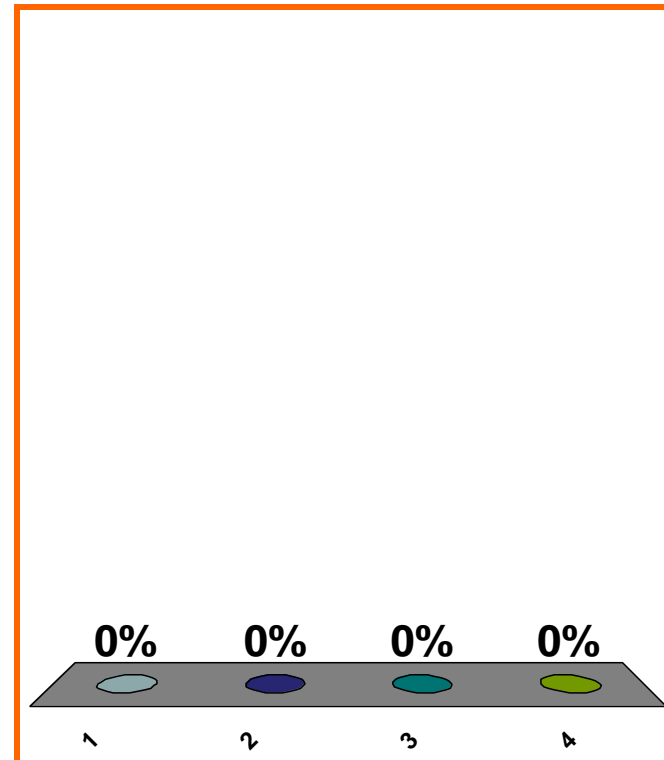
$$\lim_{x \rightarrow 0} \frac{3x^3 + 2x}{x} = ??$$

(a) 0

(b) 2

(c) 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										

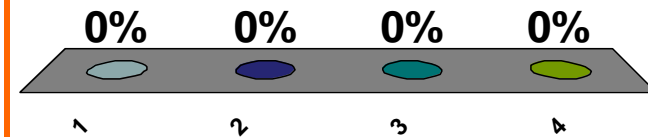
$$\lim_{x \rightarrow 2} f(x) = -\infty$$

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

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

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

(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										

0 of 5

Topic 0150

0 pts

8



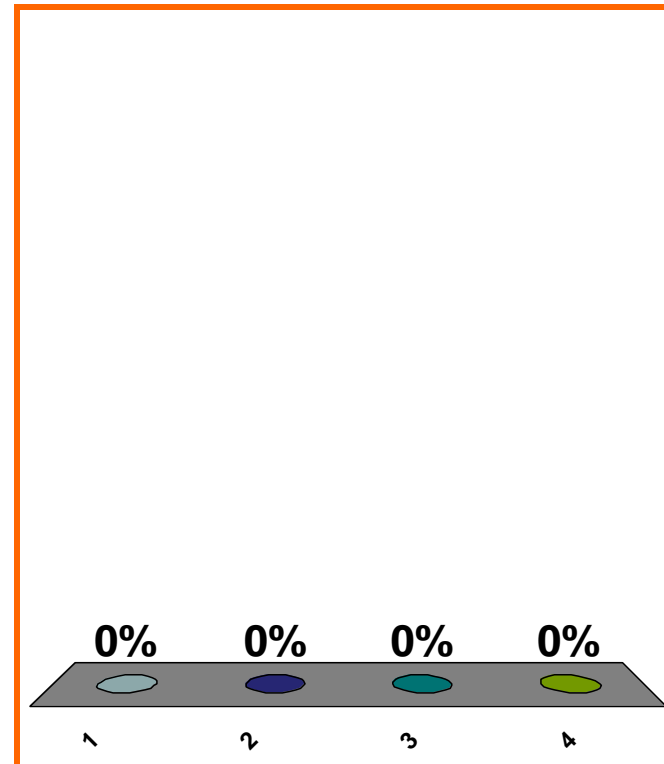
$$x^2 + 3\sqrt{x} + 1 \text{ is ??}$$

(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

(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

END  
QUIZ

END  
CLASS

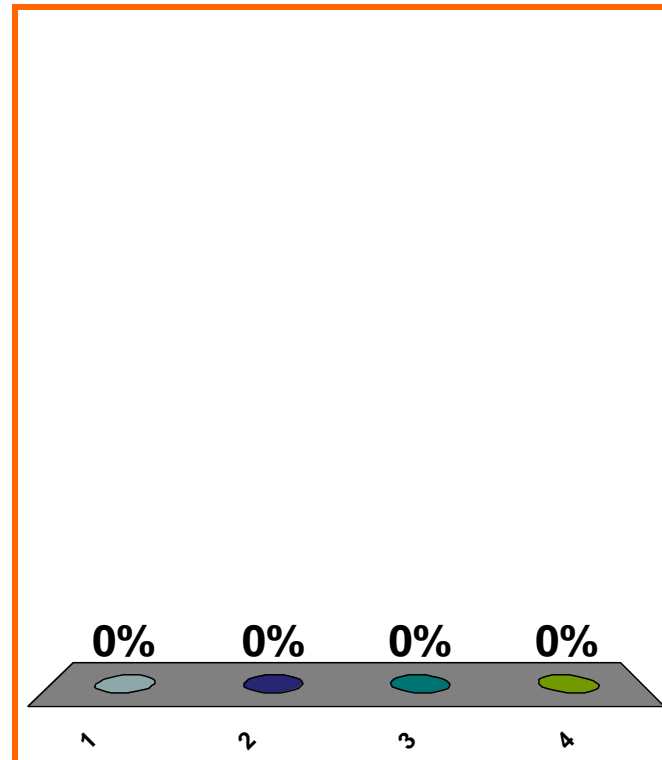
$$\frac{(q^2 - 1)(3q^3 - 2q^2 + q - 7)}{q^2 - 1} \text{ is } \dots$$

(a) a polynomial in  $q$

(b) rational, **nonpolynomial**  
in  $q$

(c) transcendental in  $q$

(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

$|x|$  is ??

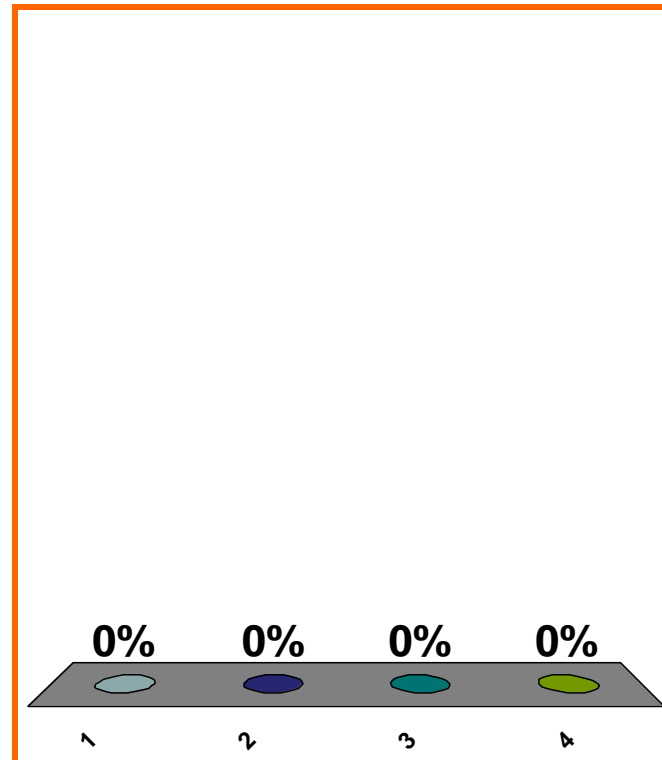
$$|x| = \sqrt{x^2}$$

(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

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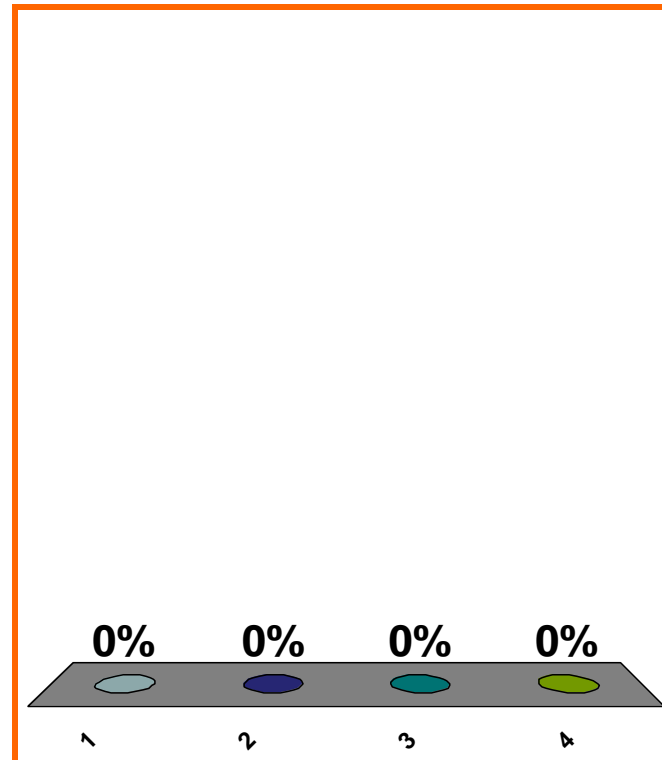
$$x^2 + 3x + 1 \text{ is } ??$$

(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

(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

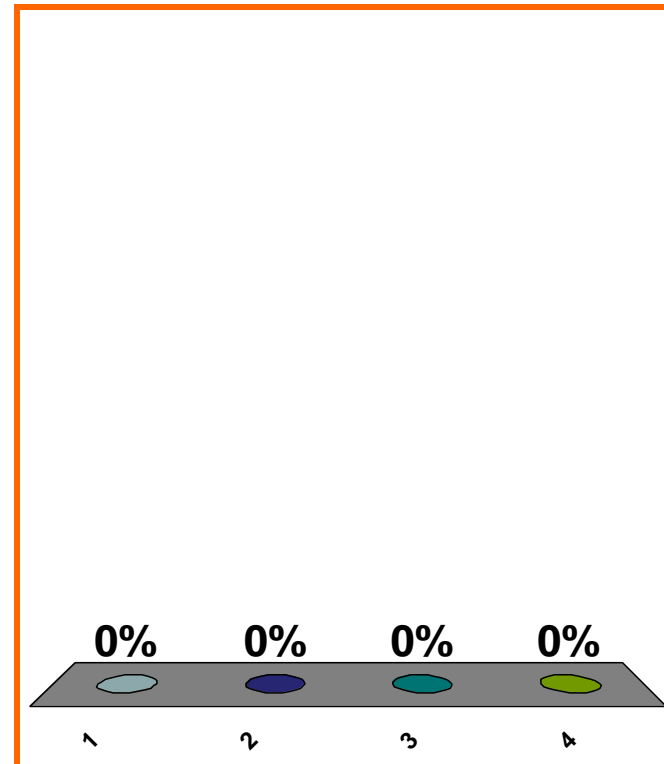
$$x^2 + 3\sqrt{x} + 1 \text{ is ??}$$

(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

(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

$\sin x$  is ??

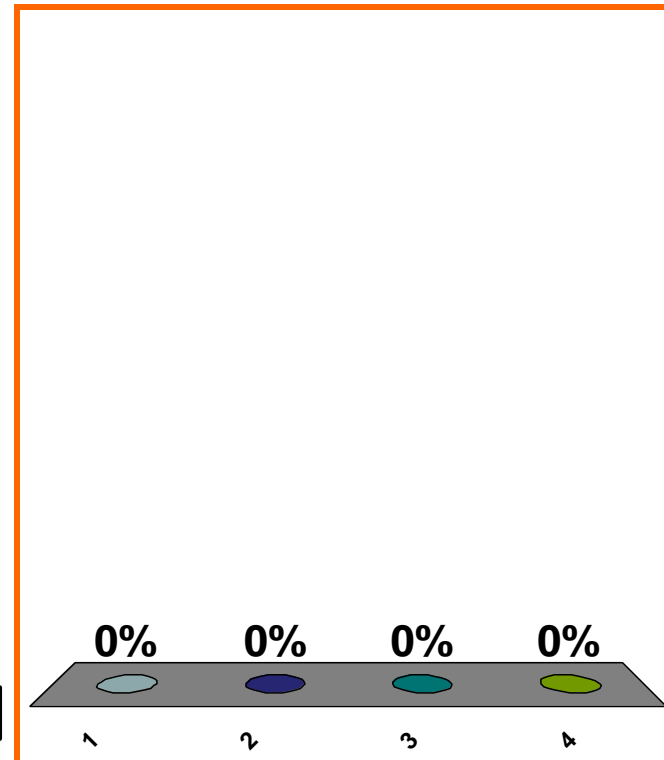
(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

(d) **none** of the above

Correct answer: transcendental



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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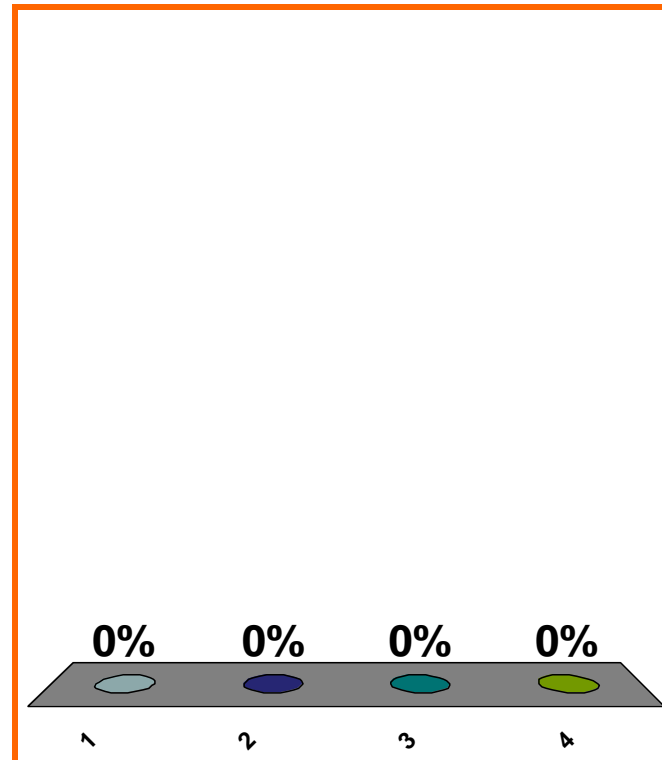
$x^{10}$  is ??

(a) polynomial

(b) rational, not polynomial

(c) algebraic, not rational

(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

$10^x$  is ??

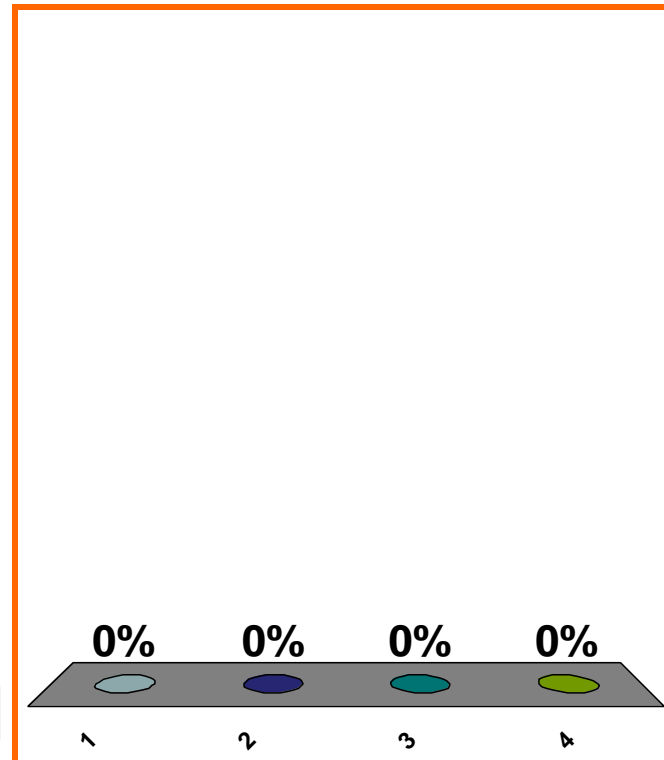
(a) polynomial

(b) rational, **not** polynomial

(c) algebraic, **not** rational

(d) **none** of the above

Correct answer: transcendental

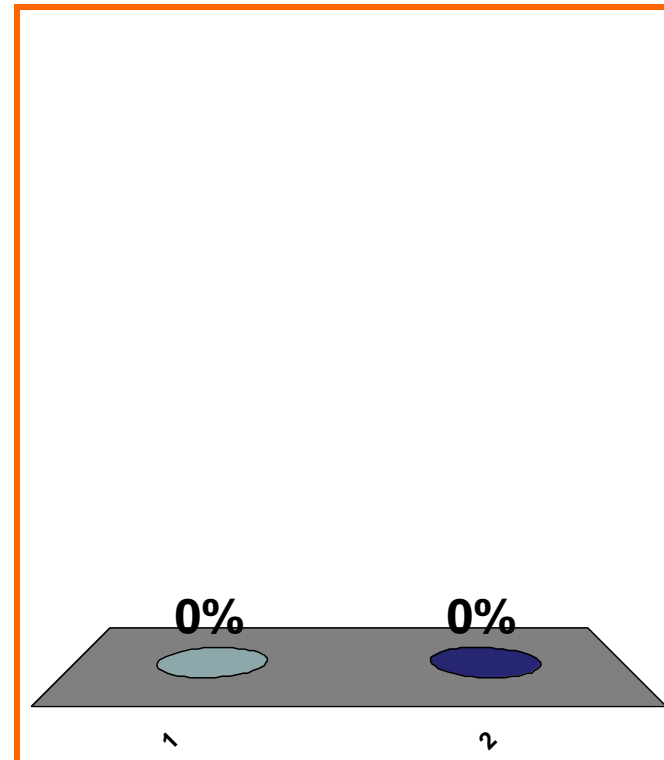


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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

(a) True

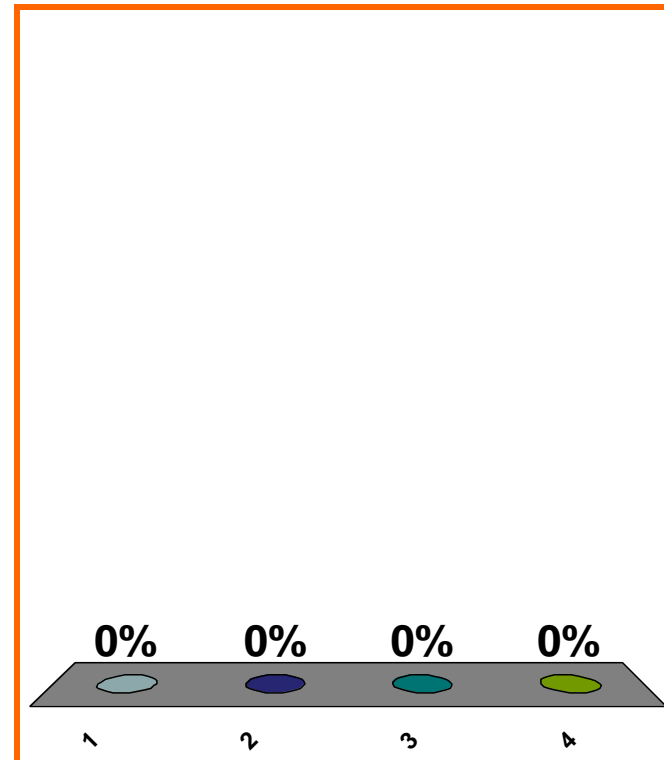
(b) False



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										

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

- (a) a polynomial in  $x$
- (b) rational in  $x$
- (c) transcendental in  $x$
- (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										

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

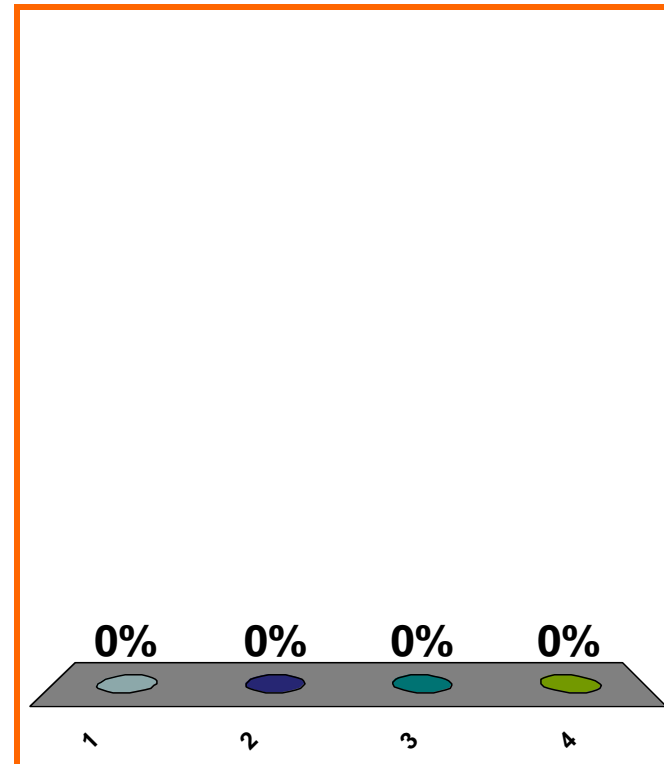
(a) 0

(b) 2

(c) 3

(d) none of the above

Correct answer: DNE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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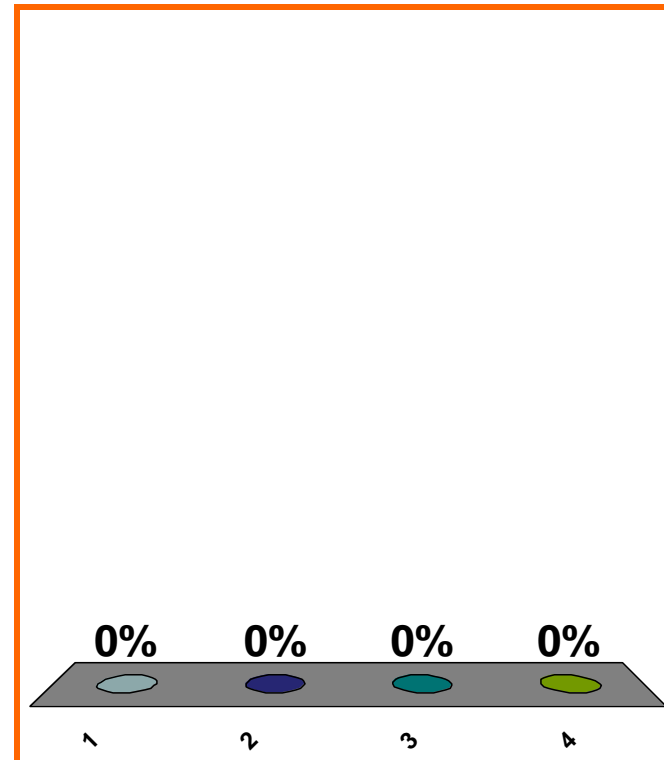
$$\lim_{x \rightarrow 0} \frac{3x^3 + 2x}{x} = ??$$

(a) 0

(b) 2

(c) 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										

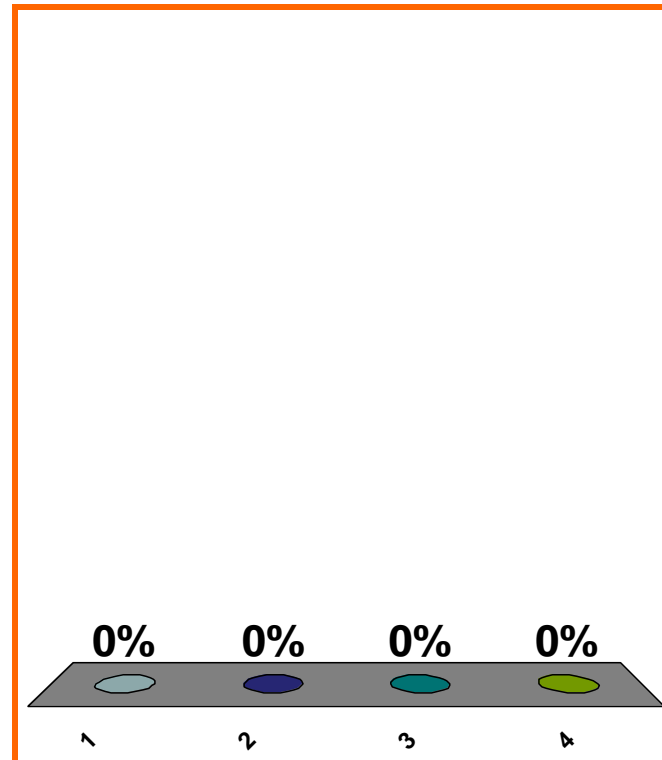
distance from 9 to 7?

(a) 2

(b) -2

(c) 4

(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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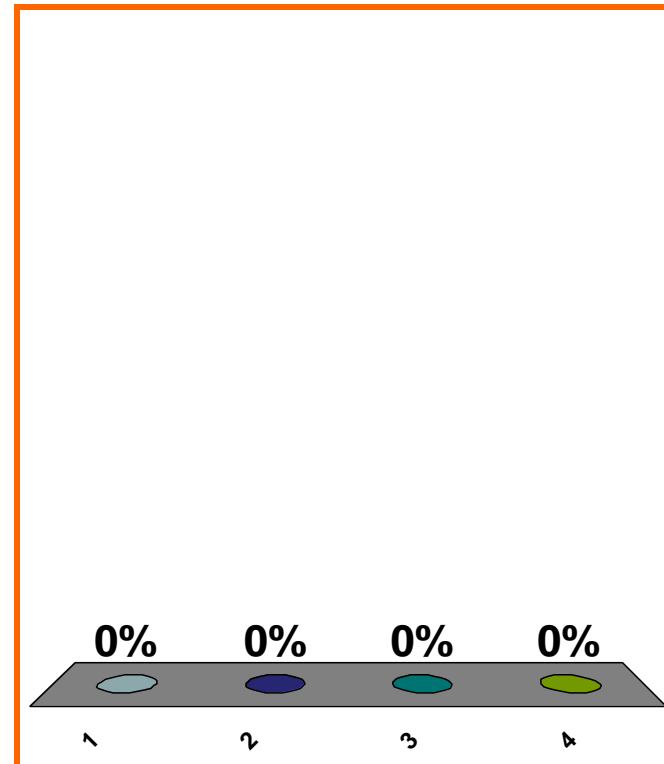
distance from  $x$  to 5?

(a)  $5 - x$

(b)  $|5 - x|$

(c)  $x - 5$

(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										



distance from  $a$  to  $b$ ?

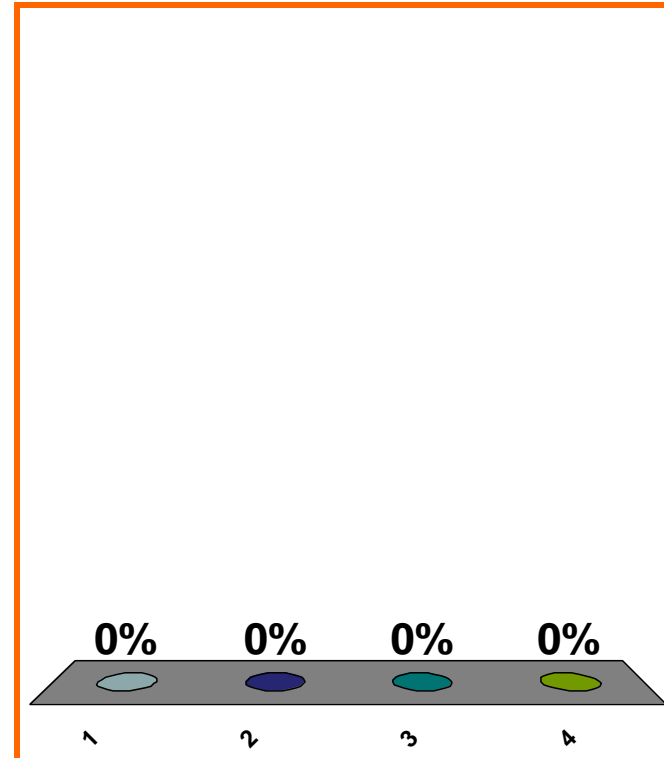
(a)  $a - b$

(b)  $b - a$

(c)  $a + b$

(d) none of the above

Correct answer:  $|a - b|$



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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SAVE THE  
SESSION  
DATA

RETURN TO  
PRESENTATION