Stage 3

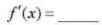
1. Consider the constant function f(x) = 3.

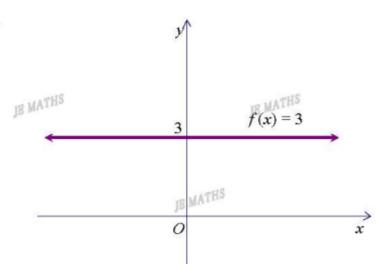


$$f(0) = MATHS, f'(0) =$$

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2. Consider the constant function f(x) = 2x - 1.

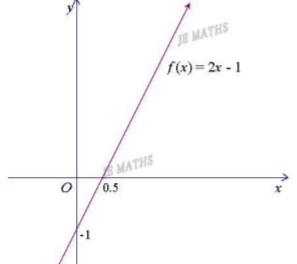
$$f(-1) = \underline{}, \mathbb{E}f'(-1) = \underline{}$$

$$f(0) = ____, f'(0) = ____$$

$$f(2) = ____, f'(2) = ____$$

$$f'(x) =$$





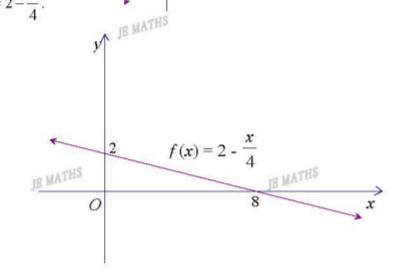
3. Consider the constant function $f(x) = 2 - \frac{x}{4}$.

$$f(0) = ____, f'(0) = ____$$

$$f(0) = ____, f'(0) = ____$$
 $f(4) = ____, f'(4) = ____$

$$f(8) = ____, f'(8) = ____$$

$$f'(x) = MATHS$$



4. Use the result "if f(x) = c is a constant function, then f'(x) = 0 is a zero function", find the derivative f'(x).

(a) f(x) = 1JE MATHS

JE MATHS (b) f(x) = 4

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(c) $f(x) = \frac{1}{2}$

(d) f(x) = 29JE MATHS

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(e) f(x) = 1

(f) f(x) = -13 IE MATHS

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(g) $f(x) = -\frac{4}{3}$

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5. Use the result "if f(x) = mx + b is a linear function, then f'(x) = m is a constant function", find the derivative f'(x).

(a) f(x) = x JE MATHS

JE MATHS (b) f(x) = 2x

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(c) f(x) = 11x

(d) $f(x) = \frac{3}{4}x$

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(e) f(x) = x

(f) f(x) = -3x IR MATHS

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(g) $f(x) = -\frac{5}{2}x_{JB} \text{ MATHS}$

(h) $f(x) = \sqrt{3}x$

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6. Use the result "if f(x) = mx + b is a linear function, then f'(x) = m is a constant function", find the derivative f'(x).

(a) f(x) = x + 3JE MATHS

- $\int_{\mathbb{R}} \int_{\mathbb{R}} f(x) = x 5$

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(c) f(x) = 8x + 11

(d) f(x) = 6x - 7IE MATHS

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(e) f(x) = 1 - 4x

(f) f(x) = 3 - 15x MATHS

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(g) $f(x) = \frac{1}{2}x - \frac{1}{3} \frac{\text{MATHS}}{5}$

(h) $f(x) = 6 - \frac{13}{4}x$

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(i)
$$f(x) = 1 - \frac{x}{3}$$

(j)
$$f(x) = 12 - \frac{5x}{7}$$

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(k)
$$f(x) = 5(2x-3)$$

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(1)
$$f(x) = \frac{1}{3} (2 \sqrt[3]{7}x)^{\text{THS}}$$

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$$(m) f(x) = \frac{2-x}{5}$$

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(n)
$$f(x) = \frac{3}{4} \left(1 - \frac{x}{\|2\|} \right)_{\text{THS}}$$

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Stage 3

1. f(-2) = 3, f'(-2) = 0

$$f(0) = 3$$
, $f'(0) = 0$

$$f\left(\frac{1}{4}\right) = 3, f'\left(\frac{1}{4}\right) = 0$$

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$$f'(x) = 0$$

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2.
$$f(-1) = -3$$
, $f'(-1) = 2$

$$f(0) = -1, f'(0) = 2$$

$$f(2) = 3$$
, $f'(2) = 2$

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$$f'(x) = 2$$
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3.
$$f(0) = 2$$
, $f'(0) = -\frac{1}{4}$

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$$f(4) = 1, f'(4) = -\frac{1}{4}$$

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$$f(8) = 0$$
, $f'(8) = -\frac{1}{4}$

$$f'(x) = -\frac{1}{4}$$

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4. (a)~(f)
$$f'(x) = 0_E \text{ MATHS}$$

- 5. (a) f'(x) = 1 (b) f'(x) = 2

 - (c) f'(x) = 11 (d) $f'(x) = \frac{3}{4}$

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- (e) f'(x) = -1 (f) f'(x) = -3
- (g) $f'(x) = -\frac{5}{2}$ (h) $f'(x) = \sqrt{3}$

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- 6. (a) f'(x)=1 (b) f'(x)=1

 - (c) f'(x) = 8 (d) f'(x) = 6
 - (e) f'(x) = -4 (f) f'(x) = -15

- (g) $f'(x) = \frac{1}{2}$ (h) $f'(x) = -\frac{13}{4}$
- (i) $f'(x) = -\frac{1}{3}$ (j) $f'(x) = \pm \frac{5}{7}$

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- (k) f'(x) = 10 (l) $f'(x) = -\frac{7}{3}$
- (m) $f'(x) = -\frac{1}{5}$ (n) $f'(x) = -\frac{3}{8}$

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