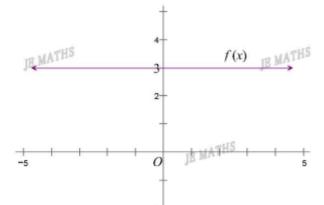
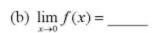
## Stage 1

- 1. Given the graph of f(x), find the limit of f(x).
  - (a)  $\lim_{x\to 0} f(x) =$ \_\_\_\_\_

 $\lim_{x\to 4} f(x) = \underline{\hspace{1cm}}$ 



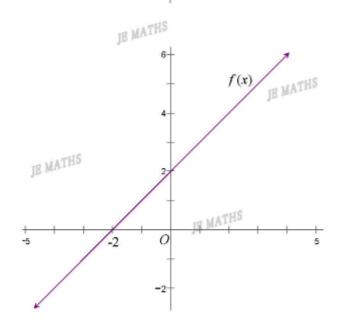
JE MATHS



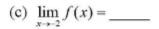
 $\lim_{x \to 2} f(x) = \underline{\qquad}$ 

$$\lim_{x \to 1} f(x) = \underline{\hspace{1cm}}$$

JE MATHS

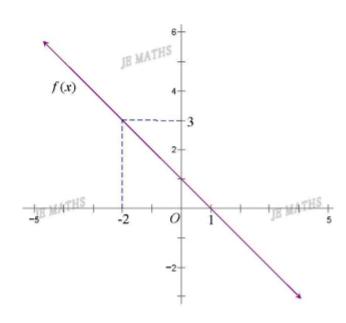


JE MATHS

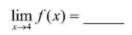


 $\lim_{x\to 0} f(x) = \underline{\text{ISMATHS}}$ 

 $\lim_{x \to 1} f(x) = \underline{\hspace{1cm}}$ 

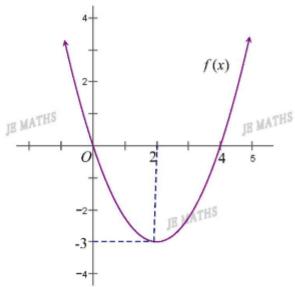


(d)  $\lim_{x\to 2} f(x) =$ \_\_\_\_\_



JE MATHS



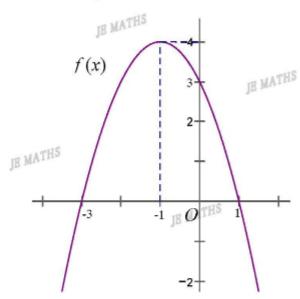


(e)  $\lim_{x \to -1} f(x) =$ \_\_\_\_\_

$$\lim_{x\to 0} f(x) = \underline{\text{IB MATHS}}$$

$$\lim_{x\to 3} f(x) = \underline{\hspace{1cm}}$$

JE MATHS

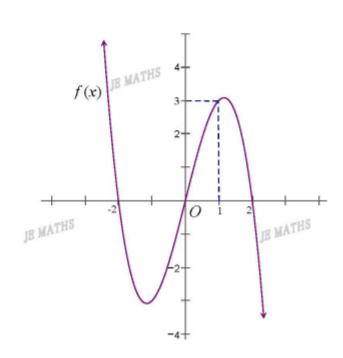


JE MATHS

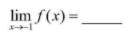
(f)  $\lim_{x \to -2} f(x) =$ \_\_\_\_\_

$$\lim_{x\to 0} f(x) = \underline{\qquad}$$
JE MATHS

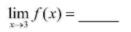
 $\lim_{x\to 1} f(x) = \underline{\hspace{1cm}}$ 



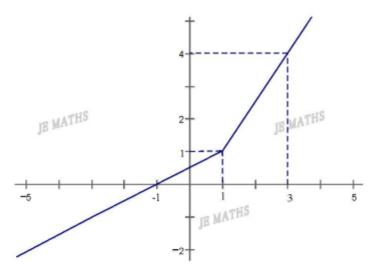
(g)  $\lim_{x \to -3} f(x) =$ \_\_\_\_\_



 $\lim_{x \to 1} f(x) = \underline{\hspace{1cm}}$ 



JE MATHS

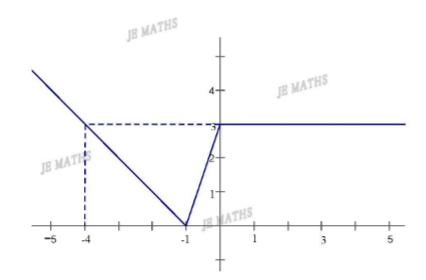


(h)  $\lim_{x \to -4} f(x) =$ \_\_\_\_\_

 $\lim_{x \to 1} f(x) = \underline{\qquad}$ 

$$\lim_{x\to 0} f(x) = \underline{\hspace{1cm}}$$

 $\lim_{x\to 2} f(x) = \underline{\hspace{1cm}}$ 



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2. Find the limit of each function.

(a)  $\lim_{x\to 1} 4$ 

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(b)  $\lim_{x\to 3} 2x + S$ 

(c)  $\lim_{x \to 0} (x+7)$ 

 $\lim_{x\to 4} (2x-1)$ 

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(e) 
$$\lim_{x \to -1} \left( \frac{x+1}{3} \right)$$

(f) 
$$\lim_{x \to 2} \left( 7 - \frac{x}{2} \right)$$

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(g) 
$$\lim_{x \to 1} \left( x^2 + 3x \right)$$

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(h) 
$$\lim_{x \to \frac{1}{2}} (1 - x^2)$$

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(i) 
$$\lim_{x \to -1} (x^2 - x + 2)^{ATHS}$$

(j)  $\lim_{h\to 0} \left(h^2 - 6h\right)$ 

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(k) 
$$\lim_{x \to 1} \left( \frac{x-2}{x+1} \right)$$

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(1) 
$$\lim_{x \to 4} \left( \frac{x^2}{x - 3} \right)$$

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$$(m)\lim_{x\to 3} \left(\frac{3x}{x^2-1}\right)$$

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$$\text{(n)} \lim_{x \to 2} \left( \frac{x^2 + 2x}{x - 4} \right)$$

## Stage 1

1.

- (a) (3)
  - (3)
- (b) (2)
  - (0) (3) MATHS
- (c) (3)
  - (1)
  - (0)
- (d) (-3)
  - (0)
- (e) (4)
  - (3)
- (0)
- (f) (0)
- JE MATHS (g)(-1)
  - (1)
- (h) (3)

  - (3)
- (a)  $\lim_{x \to 1} 4 = 4$

2.

- (b)  $\lim_{x\to 3} 2x = 2 \times 3 = 6$
- (c)  $\lim_{x\to 0} (x+7) = 0+7=7$
- (d)  $\lim_{x\to 4} (2x-1) = 2 \times 4^{\frac{5}{2}} 1 = 7$
- (e)  $\lim_{x \to -1} \left( \frac{x+1}{3} \right) = \frac{-1+1}{3} = 0$
- (f)  $\lim_{x\to 2} \left( \sqrt{7} \frac{\text{HS} x}{2} \right) = 7 \frac{2}{2} = 6$
- (h)  $\lim_{x \to \frac{1}{2}} (1 x^2) = 1 (\frac{1}{2})^2 = \frac{3}{4}$

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- JE MATHS
  - (0)(3)
- JE MATHS (0)
  - JE MATHS
  - (4)
  - (0) (3) MATHS JE MATHS

    - JE MATHS
      - - JE MATHS

- JE MATHS
  - JE MATHS
- (g)  $\lim_{x \to 1} (x^2 + 3x) = 1^2 + 3 \cdot 1 = 4$

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(i) 
$$\lim_{x \to -1} (x^2 - x + 2) = (-1)^2 - (-1) + 2 = 4$$

(j) 
$$\lim_{h\to 0} (h^2 - 6h) = 0^2 - 6 \times 0 = 0$$

(k) 
$$\lim_{x \to 1} \left( \frac{x-2}{x+1} \right) = \frac{1-2}{1+1} = -\frac{1}{2}$$

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(1) 
$$\lim_{x\to 4} \left(\frac{x^2}{x-3}\right) = \frac{4^2}{4-3} = 16$$

(m) 
$$\lim_{x \to 3} \left( \frac{3x}{x^2 - 1} \right) = \frac{3 \times 3}{3^2 - 1} = \frac{9}{8}$$
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(n) 
$$\lim_{x\to 2} \left( \frac{x^2 + 2x}{x-4} \right) = \frac{2^2 + 2 \times 2}{2-4} = -4$$

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