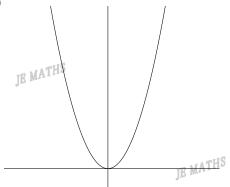
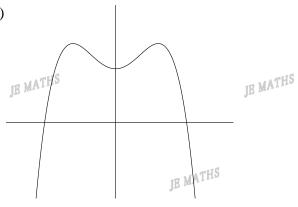
Foundation stage 1:

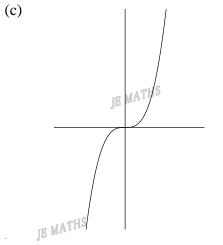
1. Check if the following graphs are even, odd or neither:

(a)

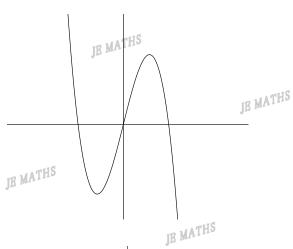


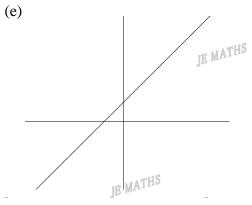
(b)



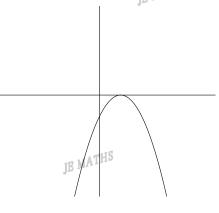


(d)





(f)



- 2. Given that $f(x) = x^4$.
 - (a) Find f(-x).

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(b) Hence, check if it is even, odd or neither.

- 3. Given that $f(x) = x^3 + 5x$.
 - (a) Find:
 - (i) f(-x)

(ii) -f(x)

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(b) Hence, check if it is even, odd or neither.

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- 4. Given that $f(x) = x^4 + 5x^2 1$.
 - (a) Find:

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(i) f(-x)

(ii) -f(x)

(b) Hence, check if it is even, odd or neither MATHS

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5. Determine the following function are even, odd or neither by finding f(-x) first: JE MAT

(a) $f(x) = x^4 - 7x^2$

(b) $f(x) = 2x - 3x^3$

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(c) $f(x) = x^4 - x^5$

(d) $f(x) = x - x^3 + x^5$

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Foundation stage 2:

- 1. Evaluate:
 - (a) |7|

(b) |-7|

(c) |7-11|

- JE MATHS
 (d) $4 |2^3 3^2|$
- JE MATHS
- 2. Solve the following absolute value equations by using a number line.
 - (a) |x| = 7

(b) |3x| = 12

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(c) |x-3|=2

(d) |x+5|=12

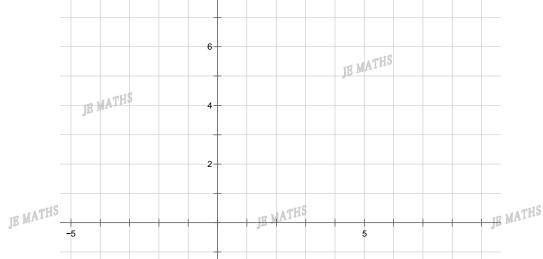
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- 3. Given that f(x) = |x-2|.
- JE MATHS
- (a) Fill in the table below:

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X	-2	-1	0	1	2
f(x)					



(b) Hence, sketch this function on the given number plane:



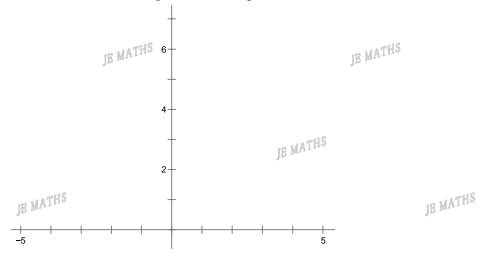
(c) Explain how this function is shifted from the function f(x) = |x|.

- 4. Given that g(x) = |x| + 2.
 - (a) Fill in the table below:

X	-2	-1	0	1	2
g(x)					

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(b) Hence, sketch this function on the given number plane:



(c) Explain how this function is shifted from the function g(x) = |x|.

5. Check if the following statement is true if x = -2:

(a)
$$|x| = x$$

(b)
$$|x| = x + 4$$

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(c)
$$|x| = |2x + 2|$$

(d)
$$|x+2| < |x| + 2$$

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6. Solve the following absolute value equations by using algebraic method:

(a)
$$|4x| = 8$$

(b)
$$|4x-3|=-1$$

$$|3x+6|=0$$

(d)
$$|4x-3| = 9$$



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Foundation stage 1:

1. (a) even (b) even

- (c)
- JE MATHS odd

- (d)
- JE MATHS odd

- (e)
- neither

- (f)
- neither
- 2. (a) $f(-x) = (-x)^4 = x^4$
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- (b) f(-x)=f(x)even
- 3. (a)
 - (i)
 - $f(-x) = (-x)^3 + 5(-x)^5$ = $-x^3-5x$

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- (ii)
- $-f(x) = -(x^2+5x)$ $= -x \frac{2}{5}x$

(b) f(-x) = -f(x)odd

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- 4. (a)
- (i) JE MATHS
 - $f(-x) = (-x)^4 + 5(-x)^2 1$ $= x^4 + 5x^2 1$

- (ii)
- $-f(x) = -(x^4 + 5x^2 1)$ $=-x^4-5x^4+1$

- (b) $f(-x) \neq f(x)$, $f(-x) \neq f(x)$ neither
- 5. (a)
 - $f(-x)=(-x)^4-7(-x)^2$

- f(-x)=f(x)
- even

- (b) $f(-x)=2(-x)-3(-x) \stackrel{3}{=} -2x+3x \stackrel{3}{=}$
- $-f(x) = -2x + 3x^3$
- f(-x)=-f(x)
- odd

- (c)
- $f(-x) = (-x)^4 (-x)^5$ $=1x^{4} + x^{5}$
- $-f(x) = -x^4 x^5$
- $f(-x)\neq f(x), f(-x)\neq f(x)$
- neither

- (d)
- $f(-x) = -x (-x)^3 + (-x)^5 = -x + x x^5$ JE MATHS $f(x) = -x + x^{3} - x^{5}$

 - f(-x)=-f(x)
 - odd

Foundation stage 2:

- 1. (a)
 - 7

(b) 7

(c)

(d)

$$|A| = 4 - 1 = 3$$

$$|A| = 4 - 1 = 3$$

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2. Solve the following absolute value equations by using a number line.

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- (a)
- x=±7

- (b)
- $x=\pm 4$

- (c)
- x=5, 1

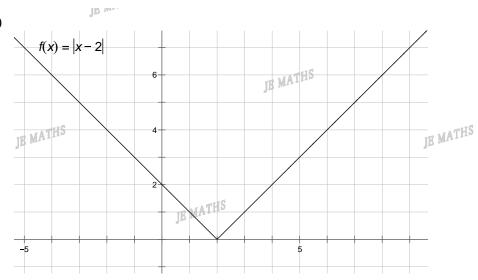
- (d)
- x=7, -17

3. (a)

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X	-2	-1	0	1	2
f(x)	4	3	2	1	0

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(b)



(c) 2 units right

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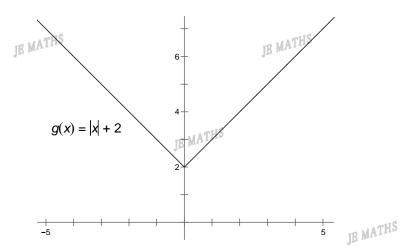
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4. (a)

X	-2	-1	0	1	2
g(x)	4	3	2	3	4

(b)



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(c) 2 units up

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5. (a) F

(b) T

(c) T (d) JE MATHS

F

6. (a) JE MATHS

(b)

no real solution

4x=<u>+</u>8

x=<u>+</u>2

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(c) 3x+6=0

3x = -6

x=-2

(d)

 $4x-3=\pm 9$

4x=12, 4x=-6

x=3, x=-3/2

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