وزارة التربية والتعليم و التعليم الفنى
الإدارة المركزية للتعليم العام
إدارة تنمية مادة الرياضيات

برعاية معالي وزير التربية والتعليم و التعليم الفنى
السيد الأستاذ/ محمد عبد اللطيف

وتوجيهات رئيس الإدارة المركزية للتعليم العام

د/ هالة عبد السلام خفاجى

إشراف علمي

مستشار الرياضيات

أ/ منال عزقول

أداءات وتقييمات لمنهج الرياضيات البحتة لغات

للصف الثانى الثانوي "علمى"

الفصل الدراسى الأول

للعام الدراسي 2025 / 2026

الأسبوع الرابع

لجنة الإعداد

د/ محمد عبد العاطى أ/ محمود سليمان أ/ عفاف جاد

ترجمة

أ/ عمرو فاروق

مراجعة الترجمة

أ/ شريف البرهامى

1) In each of the following figures: show if the curve is symmetric about x-axis, y-axis and which is symmetric about the origin point, then interpret your answer:

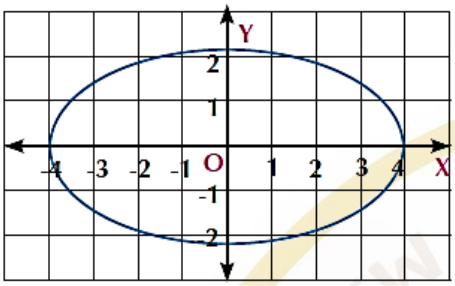


Figure (1)

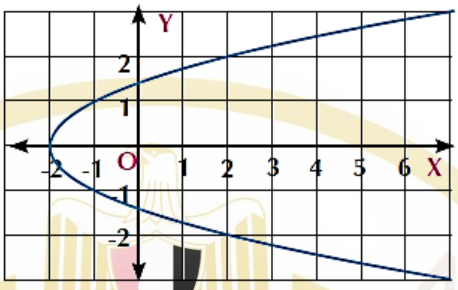


Figure (2)

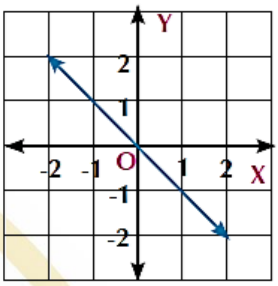


Figure (3)

2) In each of the following figures: Find the range for each function and mention its type (even, odd or otherwise):

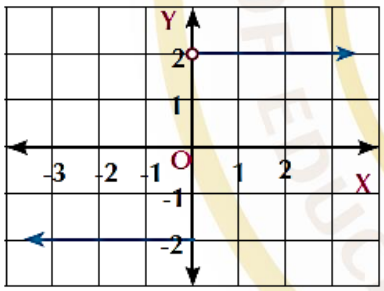


Figure (1)

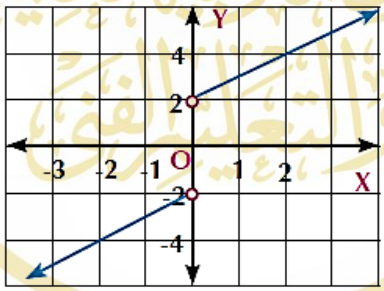


Figure (2)

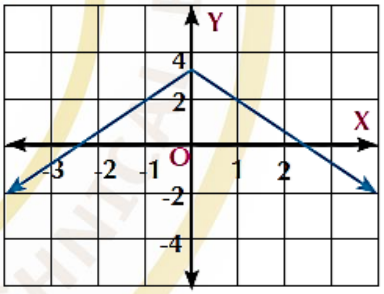
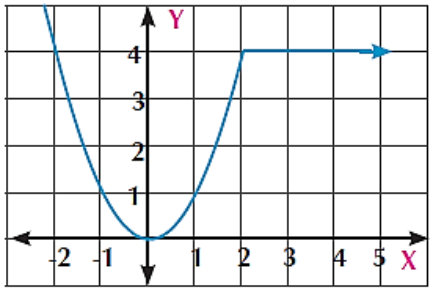


Figure (3)

3) Investigate the type for each of the following functions (even - odd - otherwise):

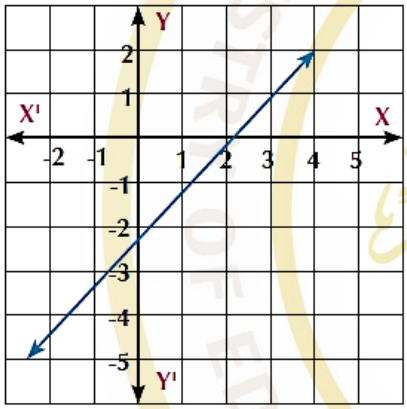
a) $f(x) = x^4 + x^2 - 1$ b) $f(x) = x^3 - \frac{1}{x}$ c) $f(x) = x \cos x$

4) In the opposite graph:
Discuss the monotony of the function

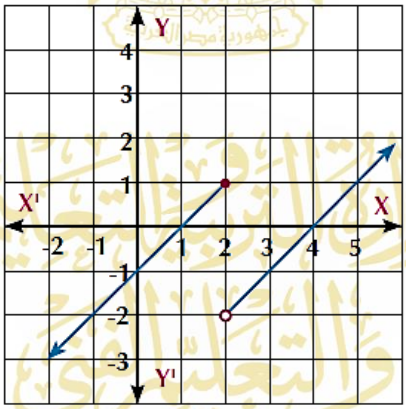


5) Each of the following figures shows the graph of the function $f : X \to Y$ where $y = f(x)$, from the graph, deduce the domain , range and monotony of the function:

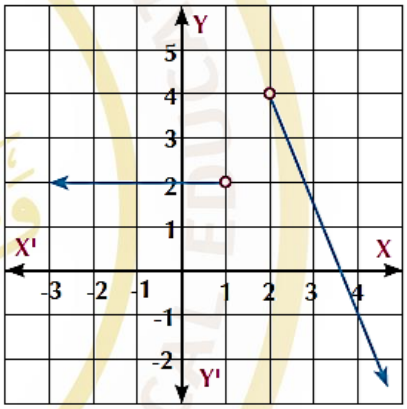
a



b



c



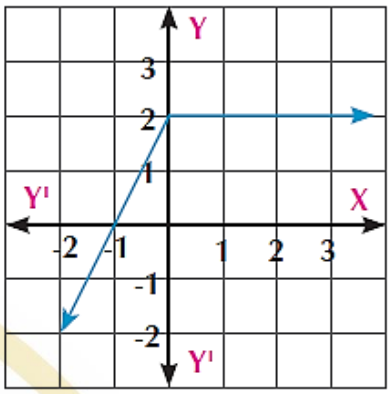
6) Show the type the functions f , if it is (even - odd - otherwise):

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

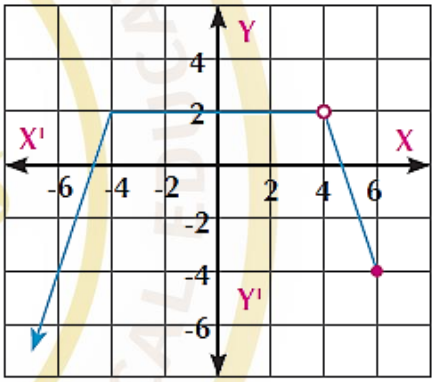
7) Show the type the functions f , if it is (even - odd - otherwise):

$$f(x) = \frac{x^3+2}{x-3}$$

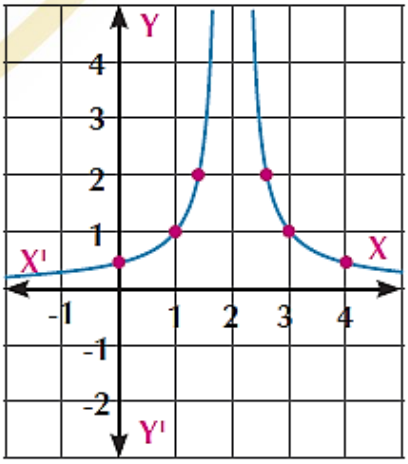
8) Deduce the domain the function shown by the following graph, then deduce its range and its monotony:



9) Deduce the domain the function shown by the following graph, then deduce its range and its monotony:



10) Deduce the domain the function shown by the following graph, then deduce its range and its monotony:



11) Find: $\lim\limits_{x\to 3} \dfrac{x^2-9}{x-3}$

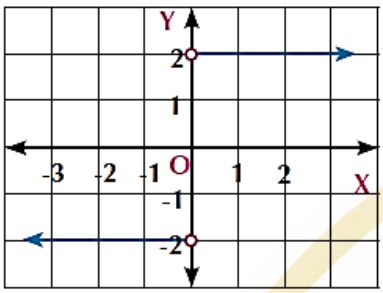
12) Find: $\lim\limits_{x\to 2} \dfrac{x^3-x^2-5x+6}{x-2}$

13) Find: $\lim\limits_{x\to 4} \dfrac{\sqrt{x-3}-1}{x-4}$

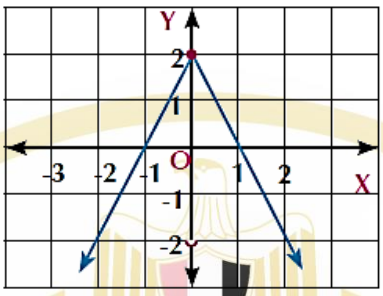
14) Find: $\lim\limits_{x\to 5} \dfrac{x^2-5x}{\sqrt{x+4}-3}$

15) Find: $\lim\limits_{x\to -3} \dfrac{x^3-10x-3}{x^2+2x-3}$

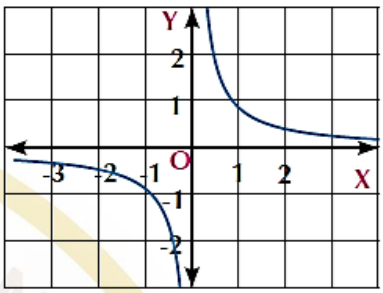
1) In each of the following figures: show if the curve is symmetric about x-axis, y-axis and which is symmetric about the origin point, then interpret your answer:



(A)



(B)



(C)

2) In each of the following figures: Find the range for each function and mention its type (even, odd or otherwise):

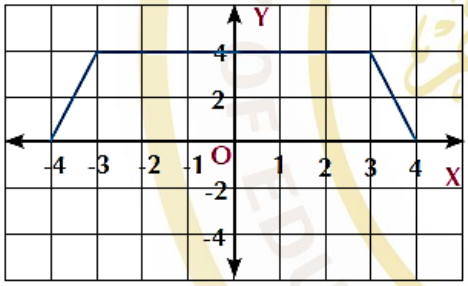


Figure (1)

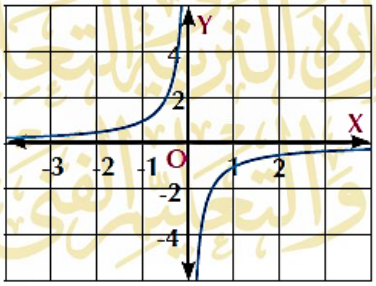


Figure (2)

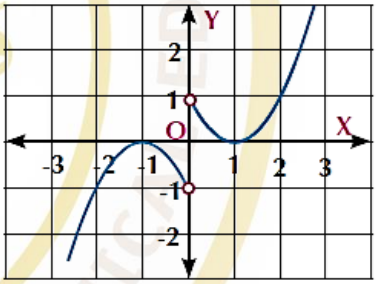
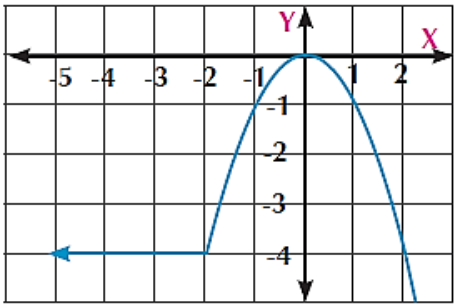


Figure (3)

3) Investigate the type for each of the following functions (even - odd - otherwise):

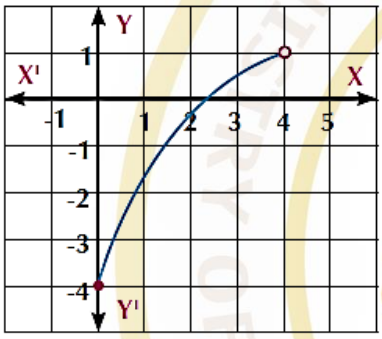
a) $f(x) = 3x - 4x^3$ b) $f(x) = x^2 - 3x$ c) $f(x) = \sqrt{x^2 + 6}$

4) In the opposite graph:
Discuss the monotony of the function

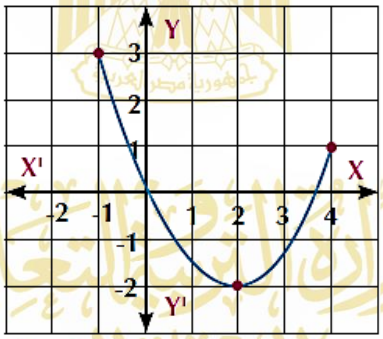


5) Each of the following figures shows the graph of the function $f : X \to Y$ where $y = f(x)$, from the graph, deduce the domain, range and monotony of the function:

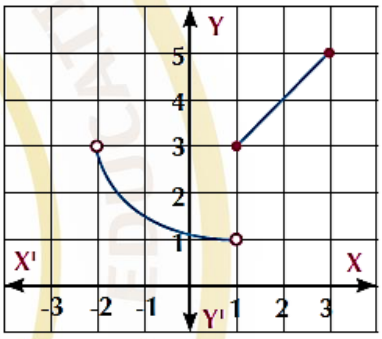
a



b



c



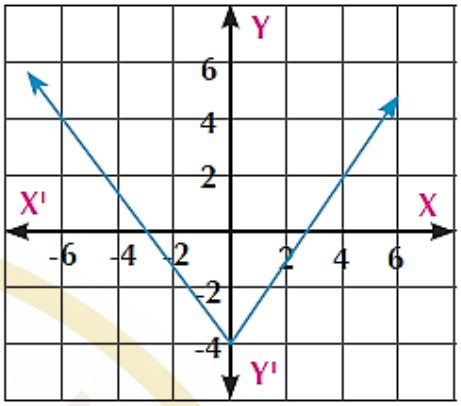
6) Show the type the functions f , if it is (even - odd - otherwise):

$$f(x) = \frac{x^2}{x+3}$$

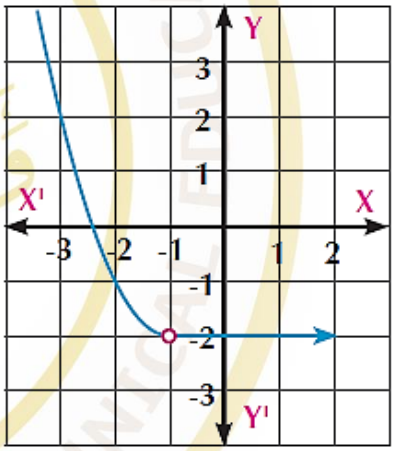
7) Show the type the functions f , if it is (even - odd - otherwise):

$$f(x) = \frac{x^3+1}{x-2}$$

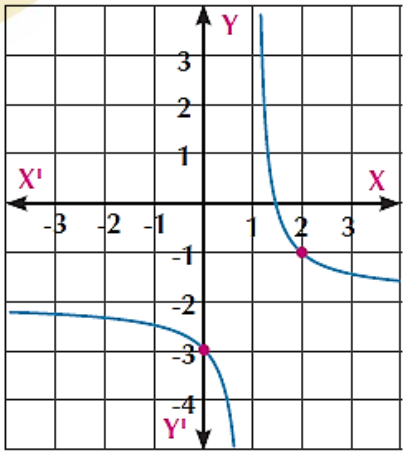
8) Deduce the domain the function shown by the following graph, then deduce its range and its monotony:



9) Deduce the domain the function shown by the following graph , then deduce its range and its monotony:



10) Deduce the domain the function shown by the following graph , then deduce its range and its monotony:



11) Find: $\lim\limits_{x\to 2} \dfrac{x^2-4}{x-2}$

12) Find: $\lim\limits_{x\to 3} \dfrac{x^3-10x+3}{x^2-2x-3}$

13) Find: $\lim\limits_{x\to 5} \dfrac{\sqrt{x^2-9}-4}{x-5}$

14) Find: $\lim\limits_{x\to 6} \dfrac{x^2-6x}{\sqrt{x+3}-3}$

15) Find: $\lim\limits_{x\to -3} \dfrac{x^2-10x-39}{x^2+2x-3}$

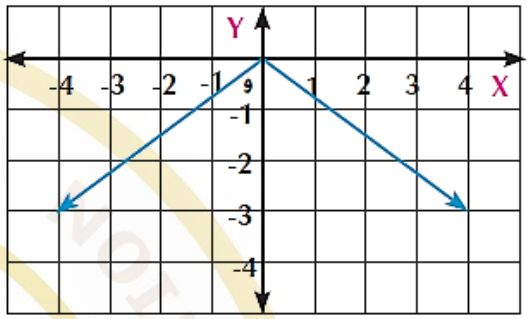
The first group

1) Investigate the type for each of the following functions (even - odd - otherwise):

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

2) In the opposite graph:

Discuss the monotony of the function



3) Find: $\lim_{x \to 4} \dfrac{x-4}{x^2-7x+12}$

4) Find: $\lim_{x \to 4} \dfrac{x^2-16}{x-4}$

5) Find: $\lim_{x \to 3} \dfrac{x-3}{\sqrt{x-2}-1}$

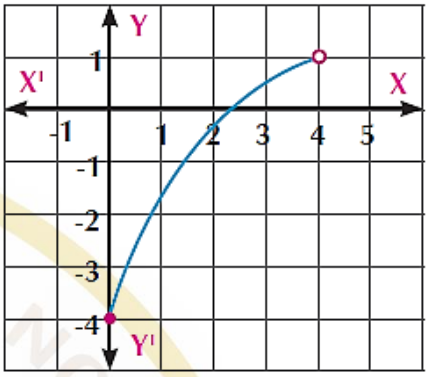
The second group

1) Investigate the type for each of the following functions (even - odd - otherwise):

$f(x) = x^2 + 2x^4$

2) In the opposite graph:

Discuss the monotony of the function



3) Find: $\lim_{x \to 2} \frac{x - 2}{x^2 - 3x + 2}$

4) Find: $\lim_{x \to 1} \frac{x^2 - 1}{x - 1}$

5) Find: $\lim_{x \to 2} \frac{x - 2}{\sqrt{x - 1} - 1}$

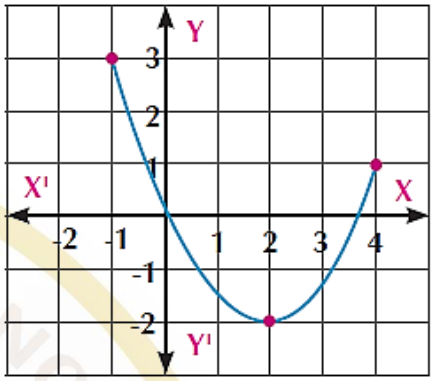
The third group

1) Investigate the type for each of the following functions (even - odd - otherwise):

$f(x) = x^3 + 3x$

2) In the opposite graph:

Discuss the monotony of the function



3) Find: $\lim_{x \to 6} \dfrac{x - 6}{x^2 - 5x - 6}$

4) Find: $\lim_{x \to 5} \dfrac{x^2 - 25}{x - 5}$

5) Find: $\lim_{x \to 2} \dfrac{x - 2}{\sqrt{x + 7} - 3}$