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 2026 / 2027

الأسبوع الرابع

لجنة الإعداد

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

ترجمة

أ/ عمرو فاروق

مراجعة الترجمة

أ/ شريف البرهامى

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

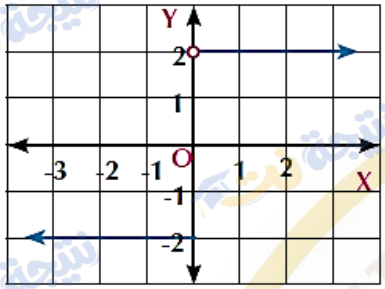


Figure (1)

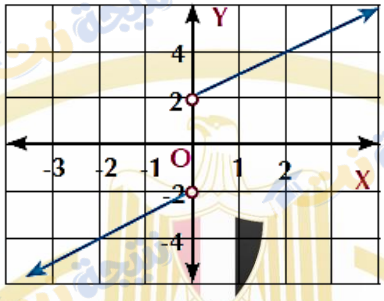


Figure (2)

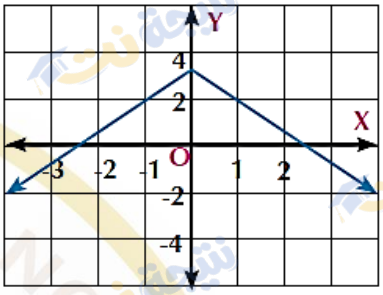
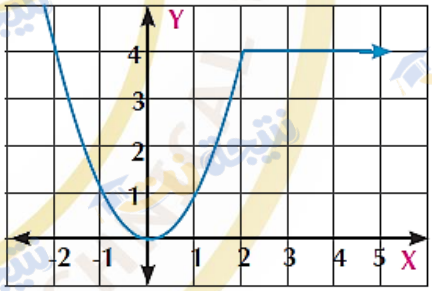


Figure (3)

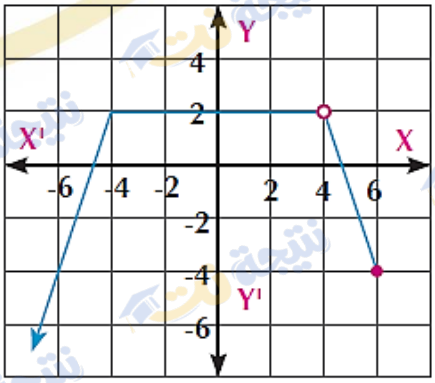
2) Investigate the type for each of the following functions (even - odd - otherwise):

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

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

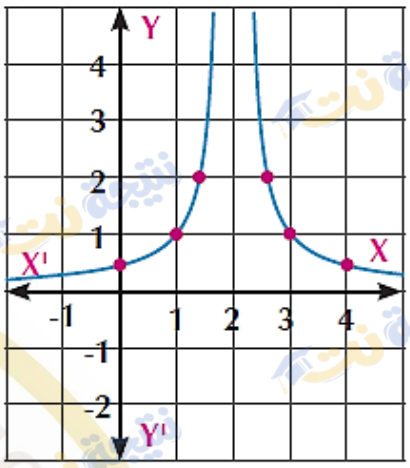


4) Deduce the domain the function shown by the following graph,
then deduce its range and its monotony:



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



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

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

8) Find: $\lim\limits_{x\to -2} \dfrac{2x^3+3x^2+4}{x^3+8}$

9) Find: $\lim\limits_{x\to 2} \dfrac{x^4+x^2-20}{x-2}$

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

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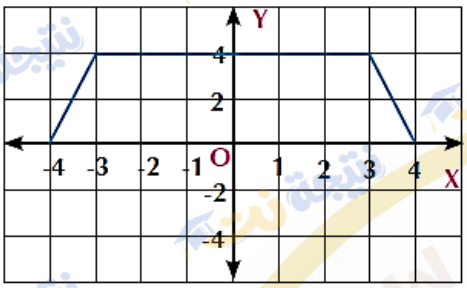


Figure (1)

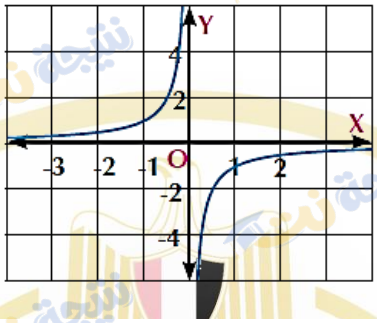


Figure (2)

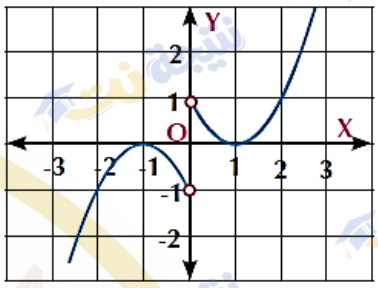
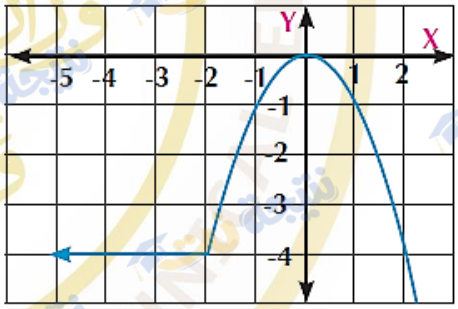


Figure (3)

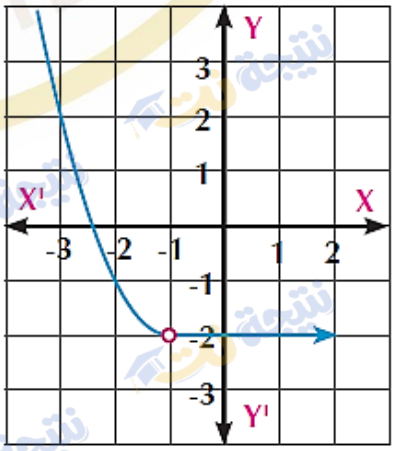
2) Investigate the type for each of the following functions (even - odd - otherwise):

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

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

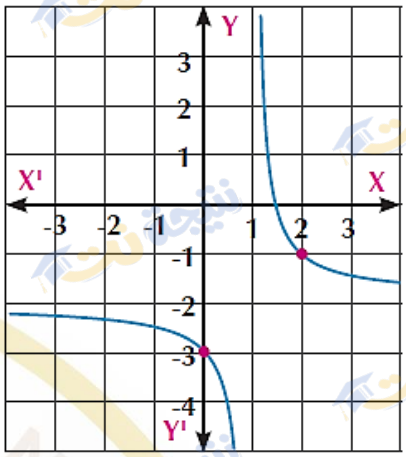


4) Deduce the domain the function shown by the following graph ,
then deduce its range and its monotony:



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



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

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

8) Find: $\lim\limits_{x\to 1} \dfrac{x^3-2x+1}{x^3+x-2}$

9) Find: $\lim\limits_{x\to 1} \dfrac{x^3-x^2-5x+5}{x-1}$

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

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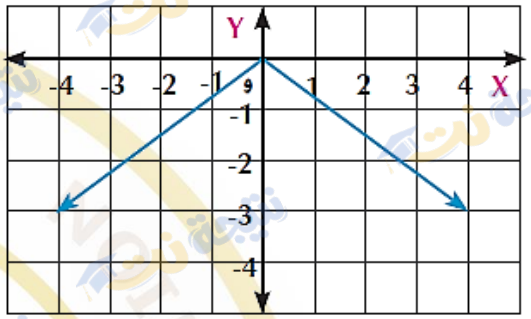
The first group

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: $\lim_{x \to 1} \dfrac{x^3 - 5x^2 + 7x - 3}{x - 1}$

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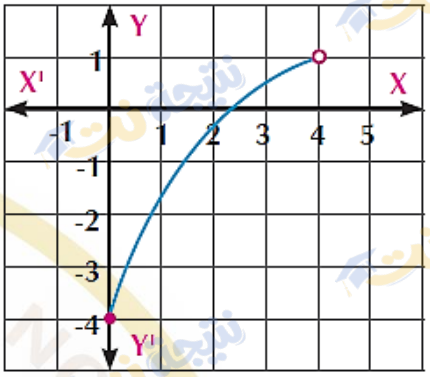
The second group

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: $\lim_{x \to 4} \frac{x^4 - 21x^2 + 20x}{x - 4}$

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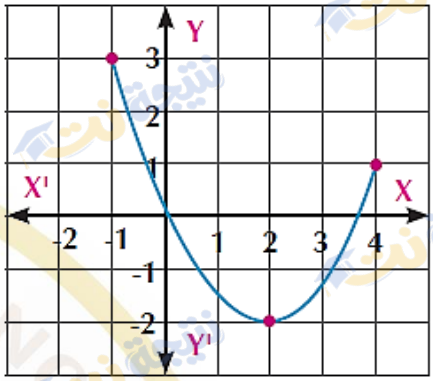
The third group

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: $\lim_{x \to 6} \frac{x - 6}{x^2 - 5x - 6}$

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

5) Find: $\lim_{x \to 2} \frac{x^3 - 7x + 6}{x - 2}$

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