

## حل اختبار تجريبي وفق الهيكل الوزاري منهج ريفيل القسم الالكتروني



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المزيد من مادة  
رياضيات:

إعداد: Dsouza Daryl Justin

### التواصل الاجتماعي بحسب الصف العاشر المتقدم



صفحة المناهج  
الإماراتية على  
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

### المزيد من الملفات بحسب الصف العاشر المتقدم والمادة رياضيات في الفصل الثالث

اختبار تجريبي وفق الهيكل الوزاري منهج ريفيل بدون الحل

1

حل تجميعية نهائية وفق الهيكل الوزاري منهج ريفيل

2

اختبار تجريبي مدرسي وفق الهيكل الوزاري بدون الحل

3

حل مراجعة امتحانية وفق الهيكل الوزاري منهج ريفيل

4

حل مراجعة امتحانية وفق الهيكل الوزاري منهج بريدج

5



# ***GI0Adv EoT3 Practice Exam 2***

## ***Part 2 Electronic (MCQ)***



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Let's Start!



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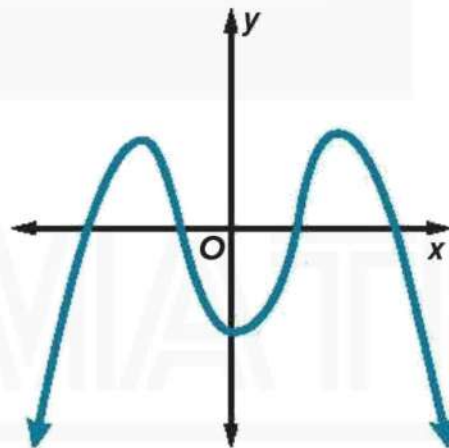
**Question 6:** Identify general shapes of graphs of polynomial functions.

1) State the degree and leading coefficient:  $18 - 3y + 5y^2 - y^5 + 7y^6$

- A) Degree: 7; Leading coefficient: 6
- B) Degree: 6; Leading coefficient: 7
- C) Degree: 0; Leading coefficient: 18
- D) Degree: 5; Leading coefficient:  $-1$**

2) From the graph, the number of real zeros of the function.

- A) 0**
- B) 2
- C) 4
- D) 6





**Question 7: Graph polynomial functions and locate their zeros.**

Determine the consecutive integer value of  $x$  between which each real zero of each function is located by using a table.

1)  $f(x) = 2x^3 - 3x^2 + 2$

A)  $x = -2$  and  $x = -1$

B)  $x = 0$  and  $x = 1$

**C)  $x = 1$  and  $x = 2$**

D)  $x = -1$  and  $x = 0$

2)  $f(x) = x^2 + 3x - 1$

**A)  $x = -4$  and  $x = -3$  &  $x = 0$  and  $x = 1$**

B)  $x = 0$  and  $x = 1$

C)  $x = -4$  and  $x = 1$

D)  $x = -2$  and  $x = -1$  &  $x = 0$  and  $x = 1$

**Question 8: Add, subtract, and multiply polynomials.**

Multiply polynomials.

1)  $(r - 2t)(r + 2t)$

**A)**  $r^2 + 4t^2$

B)  $r^2 - 2t^2$

C)  $2r - 4t$

D)  $r^2 - 4t^2$

2)  $(a + b)(2a + 3b)(2x - y)$

A)  $2a^2x - a^2y + 5abx - 2aby + b^2x - 6b^2y$

**B)**  $4ax - 2ay + 10abx - 5aby + 6bx - 3by$

C)  $4a^2x - 2a^2y + 10abx - 5aby + 6b^2x - 3b^2y$

D)  $4a^3x^2 - 2a^3y^2 + 10abx^2 - 5aby^2 + 6b^2x^2 - 3b^3y^2$





**Question 9:** Divide polynomials using long division / synthetic division.

1) Determine the quotient.

$$\frac{6x^3 - 71x^2 + 139x + 130}{3x + 2}$$

A)  $2x^2 - 25x + 63 + \frac{4}{3x+2}$

**B)**  $2x^2 - 25x + 63 + \frac{8}{3}$

C)  $2x^2 - 25x + 63 + \frac{8}{3x+2}$

D)  $2x^2 - 25x + 63 + \frac{4}{3}$

2) Rewrite as  $q(x) + \frac{r(x)}{g(x)}$  using long division.

$$\frac{2x^5 - 7x^4 - 15x^3 + 2x^2 + 3x + 6}{2x + 3}$$

A)  $x^4 - 5x^3 + x - \frac{1}{2x+3}$

B)  $x^4 + 5x^2 + x + \frac{2}{2x+3}$

C)  $x^4 - 5x^3 + x + \frac{6}{2x+3}$

**D)**  $x^4 - 5x^3 + x + \frac{6}{2}$





**Question 10:** Use the Binomial Theorem to write and find the coefficients of specified terms in binomial expansions.

Use Pascal's triangle or binomial theorem to expand the binomials

1)  $\left(3c + \frac{1}{3}d\right)^3$ .

A)  $27c^3 - 9c^2d - cd^2 - \frac{d^3}{27}$

B)  $27c^3 + 9c^2d + cd^2 + \frac{d^3}{27}$

**C)  $3c^3 + 3c^2d + \frac{1}{3}cd^2 + \frac{d^3}{3}$**

D)  $9c^3 + 6c^2d + 3cd^2 + \frac{d^3}{9}$

2) The first shelf on Hannah's bookshelf holds an equal number of fiction and nonfiction books. If Hannah selects 5 books randomly, what is the probability that 4 of the books will be fiction and 1 will be nonfiction?

A) 3.1%

B) 12.5%

**C) 31.3%**

D) 15.6%



**Question 11: Graph polynomial functions and locate their zeros.**

- 1) A shipping company will ship a package for \$7.50 when the volume is no more than  $15,000 \text{ cm}^3$ . Grace needs to ship a package that is  $3x - 5 \text{ cm}$  long,  $2x \text{ cm}$  wide, and  $x + 20 \text{ cm}$  tall.

- A)  $3x^3 + 55x^2 - 100x = 7,500$   
B)  $2x^3 + 110x^2 - 200x = 15,000$   
C)  $6x^3 - 110x^2 + 200x = 15,000$   
D)  $6x^3 + 110x^2 - 200x = 15,000$

- 2) A juice manufacturer is creating new cylindrical packaging. The height of the cylinder is to be 3 inches longer than the radius of the can. The cylinder is to have a volume of  $628 \text{ in}^3$ .

- A)  $2\pi x^3 + \pi x^2 = 628$   
B)  $\pi x^3 + 3\pi x^2 = 628$   
C)  $\pi x^3 - 3\pi x^2 = 628$   
D)  $2\pi x^3 + 2\pi x^2 = 314$



**Question 12: Factorize polynomials.**

1) Factor completely. If the polynomials is not factorable, write prime.

$$m^4 - 1$$

A)  $(m^2 - 1)(m - 1)(m + 1)$

**B)  $(m^2 + 2)(2m - 1)(m - 1)$**

C)  $(m^2 + 1)(m - 1)(m + 1)$

D)  $m^3 + m^2 + m - 1$

2) Solve  $x^4 + 8x^2 + 15 = 0$

**A)  $i\sqrt{5}, -i\sqrt{5}, i\sqrt{3}, -i\sqrt{3}$**

B)  $-\sqrt{5}, i\sqrt{5}, 2i\sqrt{3}, 2i\sqrt{3}$

C)  $-i\sqrt{5}, i\sqrt{3},$

D)  $\sqrt{5}, -\sqrt{5}, i\sqrt{3}, -i\sqrt{3}$





**Question 13:** Determine whether a binomial is a factor of a polynomial by using synthetic substitution.

Solve using synthetic substitution.

- 1) Given a polynomial and one of its factors, find the remaining factors of the polynomial:

$$3x^3 + x^2 + x - 2; 3x - 2$$

- A)  $(3x - 2)(x^2 + x + 1)$   
B)  $(3x - 2)(x^2 - x - 1)$   
**C)  $(3x - 2)(x^3 + x^2 + 1)$**   
D)  $(3x - 2)(3x + 2)$

- 2) Find the value of  $k$  so that remainder is 3.

$$(x^2 + 5x + 7) \div (x + k)$$

- A) 1 & 3**  
B) 1 & 4  
C) 4  
D) 0 & 1



**Question 14:** Determine the number and type of roots for a polynomial equation.

1) Solve  $x^3 - 6x^2 + 7x = 0$

A)  $0, -\sqrt{2}, \sqrt{2}$

B)  $0, 3 + \sqrt{2}, 3 - \sqrt{2}$

C)  $3, \sqrt{2}, -\sqrt{2}$

**D)  $3 + \sqrt{2}, 3 - \sqrt{2}$**

2) State the possible number of negative real zeros:

$$f(x) = x^4 - 5x^3 + 2x^2 + 5x + 7$$

**A) 4 or 2 or 0**

B) 4 or 2

C) 2 or 0

D) 0



**Question 15:** Find the sum, difference, product, and quotient of functions.

1) Find  $(f \cdot g)(x)$ .  $f(x) = -x^2 + 6$ ,  $g(x) = 2x^2 + 3x - 5$

A)  $3x^4 - 24x^3 + 8x^2 + 32x - 16$

B)  $x^4 + 3x^3 - 7x^2 - 18x + 30$

**C)  $2x^4 - 12x^3 + 4x^2 + 16x - 8$**

D)  $-2x^4 - 3x^3 + 7x^2 + 18x - 30$

2) Find  $\left(\frac{f}{g}\right)(x)$ .  $f(x) = -x^2 + 6$ ,  $g(x) = 2x^2 + 3x - 5$

**A)  $\langle 48, 12, -38 \rangle$**

B)  $\langle -68, -24, 55 \rangle$

C)  $\langle 22, 36, 3 \rangle$

D)  $\langle -27, 16, -21 \rangle$

**Question 16:** Find the inverse of a function or relation.

1) Find the inverse of the function  $f(x) = 3x$

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

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

C)  $f^{-1}(x) = -13x$

**D)  $f^{-1}(x) = \frac{1}{3}x$**

2) Find the inverse of the function  $f(x) = \frac{1}{2}x^2 - 1$

A)  $f^{-1}(x) = \pm\sqrt{x+1}$

B)  $f^{-1}(x) = \pm\sqrt{2x-2}$

**C)  $f^{-1}(x) = \pm\sqrt{2x+2}$**

D)  $f^{-1}(x) = \pm\sqrt{x+2}$





**Question 17:** Simplify expressions in exponential or radical form.

Simplify radical expressions.

1)  $\pm\sqrt{121x^4y^{16}}$

A)  $\pm 11x^2y^8$

B)  $\pm 121x^4y^{12}$

C)  $\pm 11x^4y^{12}$

D)  $\pm x^2y^8$

2)  $\sqrt[4]{81(x-4)^4}$

A)  $3|x+4|$

B)  $4|x-3|$

C)  $3|x-4|$

D)  $3|x+3|$

**Question 18: Graph and analyze square root functions.**

1) Identify the domain and range of  $y = -\sqrt{x - 2} + 2$

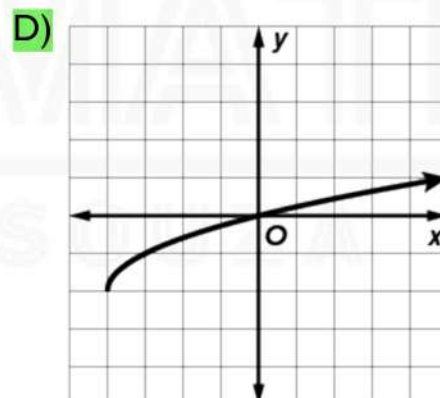
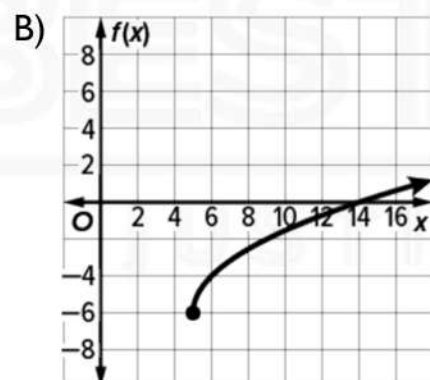
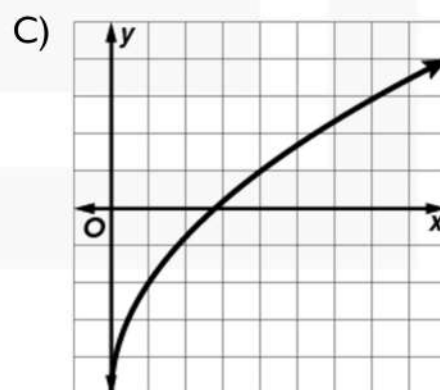
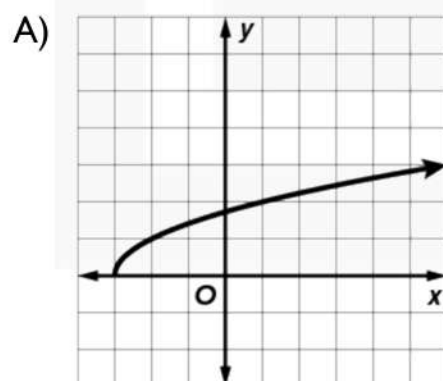
A)  $D = \{x|x \geq -1\}$ ;  $R = \{y|y \leq -2\}$

**B)  $D = \{x|x \geq 2\}$ ;  $R = \{y|y \leq 2\}$**

C)  $D = \{x|x \geq -2\}$ ;  $R = \{y|y \leq -1\}$

D)  $D = \{x|x \geq -2\}$ ;  $R = \{y|y \leq -2\}$

2) Graph  $\sqrt{x + 4} - 2$





**Question 19:** Add, subtract, multiply, and divide radical expressions.

1) Find  $(g \circ f)(x)$

$$f(x) = x^2 + 6x - 2$$

$$g(x) = x - 6$$

A)  $x^3 + 6x^2 - 4$

B)  $x^2 - 6x + 8$

C)  $x^2 - 6x - 2$

**D)  $x^2 + 6x - 8$**

2) Find  $(f \circ g)(x)$

$$f(x) = 2x$$

$$g(x) = x + 5$$

A)  $2x - 5$

B)  $2x - 10$

C)  $2x^2 + 10x + 5$

**D)  $2x + 10$**



**Question 20:** Solve radical equations/Solve radical equations with extraneous solutions.

Simplify radical expressions.

1)  $(x^3)^{\frac{3}{2}}$

A)  $\frac{3}{2}\sqrt{x^9}$

B)  $\sqrt{x^3}$

**C)  $\sqrt{x^9}$**

D)  $\sqrt{x^{\frac{1}{9}}}$

2)  $\sqrt[3]{5xy^2}$

**A)  $5^{\frac{1}{3}}x^{\frac{1}{3}}y^{\frac{2}{3}}$**

B)  $5^3x^2y^3$

C)  $125^{\frac{1}{3}}x^{\frac{1}{3}}y^{\frac{2}{3}}$

D)  $5^{\frac{1}{3}}x^{\frac{1}{2}}y^{\frac{1}{3}}$

