

اختبار تجريبي وفق الهيكل الوزاري منهج ريفيل بدون الحل



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف العاشر المتقدم ← رياضيات ← الفصل الثالث ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 12:07:19 2025-06-14

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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

حل تجميعية نهائية وفق الهيكل الوزاري منهج ريفيل

1

اختبار تجريبي مدرسي وفق الهيكل الوزاري بدون الحل

2

حل مراجعة امتحانية وفق الهيكل الوزاري منهج ريفيل

3

حل مراجعة امتحانية وفق الهيكل الوزاري منهج بريدج

4

حل نموذج تدريبي للاختبار النهائي وفق الهيكل الوزاري

5



GI0Adv EoT3 Practice Exam 2

Part I Writing (FRQ)



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Let's Start!



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**Question 1:** Add, subtract, and multiply polynomials.

Solve the polynomials.

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

2) $(4x^5 + x^3 - 7x^2 + 2)(3x - 1)$

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**Question 2: Find length of side from volume.**

- 1) The volume of a cylinder is $\pi(x^3 + 32x^2 - 304x + 640)$. If the height of the cylinder is $x + 40$ feet, find the area of its base in terms of x and π .



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**Question 2: Find length of side from volume (Continued).**

2) Rewrite $\frac{6x^4+2x^3-16x^2+24x+32}{2x+4}$ as $q(x) + \frac{r(x)}{d(x)}$ using long division.

What does the remainder indicate in this problem?

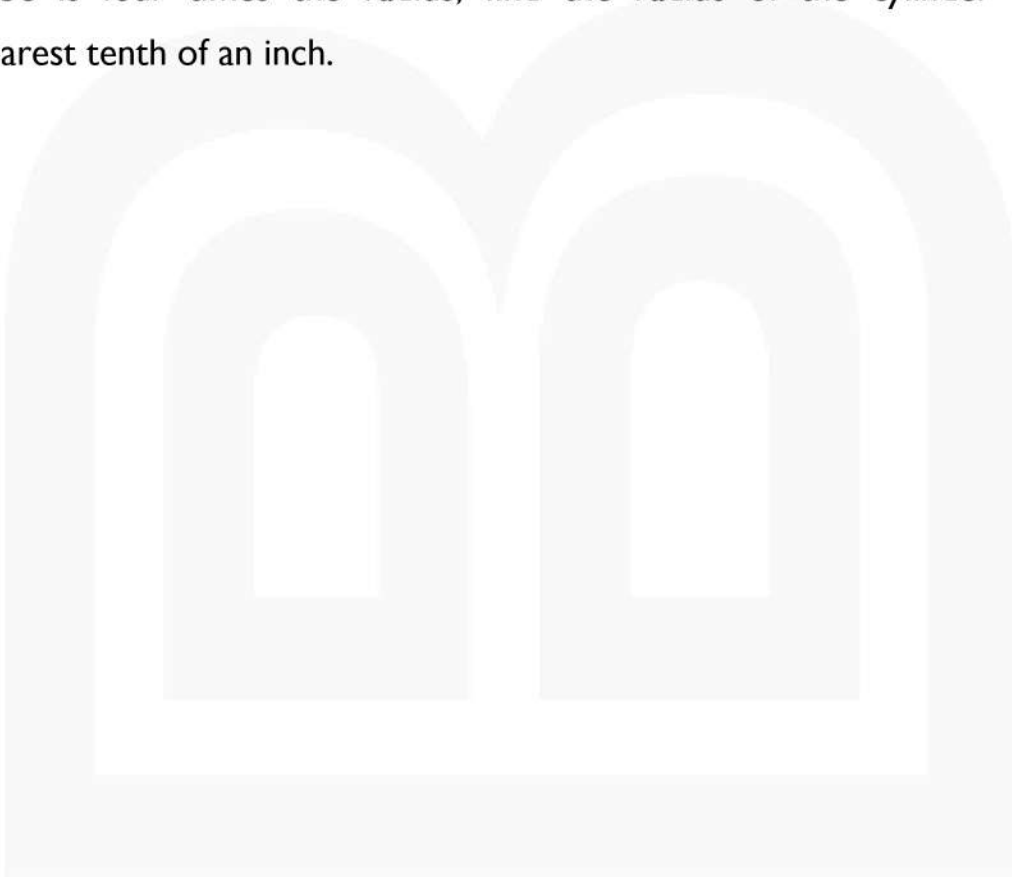


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**Question 3: Solve polynomial equations by factoring.**

- 1) The combined volume of a cube and a cylinder is 1000 cubic inches. If the height of the cylinder is twice the radius and the side of the cube is four times the radius, find the radius of the cylinder to the nearest tenth of an inch.



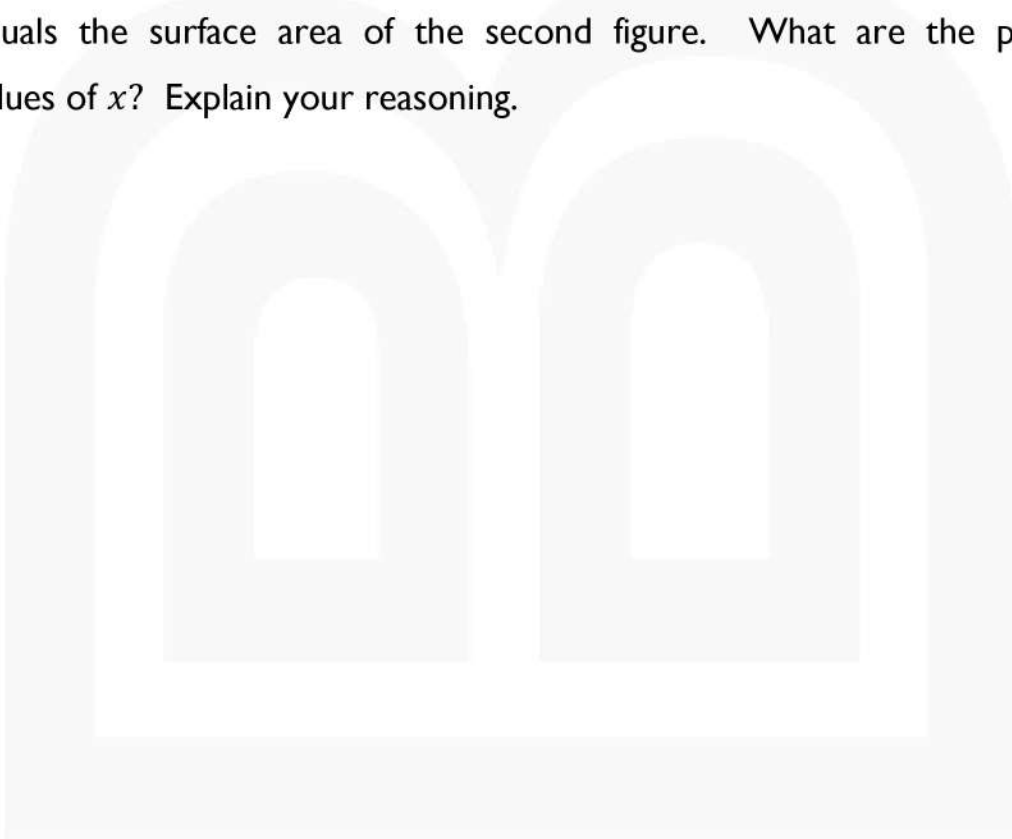
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Question 3: Solve polynomial equations by factoring (Continued).

- 2) The volume of a figure is $x^3 - 9x$. The surface area of another figure is $8x^2$. Disregarding the units, the volume of the first figure equals the surface area of the second figure. What are the possible values of x ? Explain your reasoning.



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Question 4: Determine whether two functions or relations are inverses.

Determine whether the functions are inverse function.

1) $f(x) = 6x - 2$

$$g(x) = \frac{1}{6}x + 3$$



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Question 4: Determine whether two functions or relations are inverses (Continued).

Determine whether the functions are inverse function.

2) $f(x) = 2\sqrt{x-5}$

$$g(x) = \frac{1}{4}x^2 - 5$$



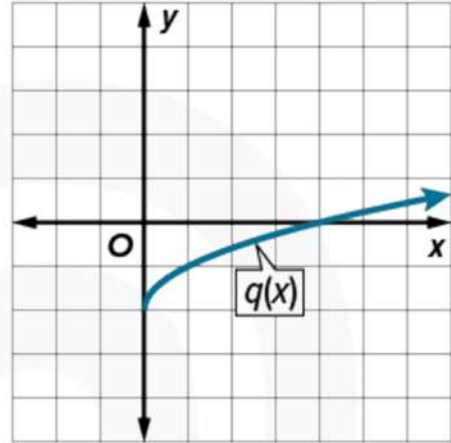
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**Question 5: Graph and analyze square root functions.**

1) Examine $p(x)$, which is 2 less than the cube root of x , and $q(x)$ shown in the graph.

a) Graph $p(x)$.



b) Compare the key features of the functions.

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GI0Adv EoT3 Practice Exam 2

Part 2 Electronic (MCQ)



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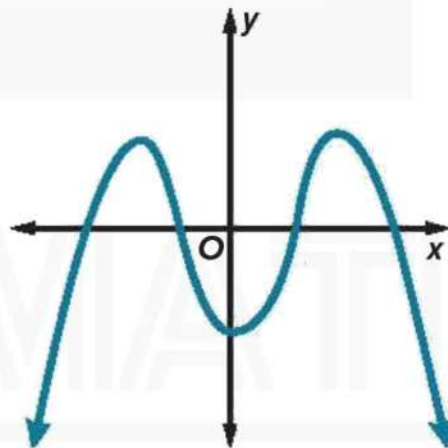
Question 6: Identify general shapes of graphs of polynomial functions.

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 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) $3|x-4|$

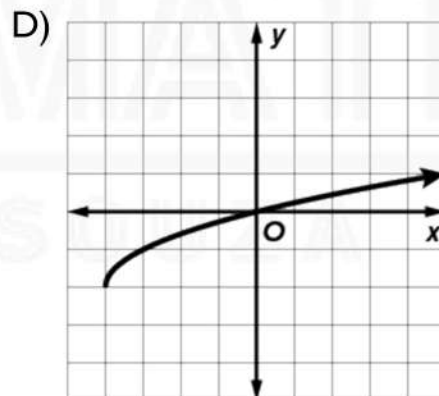
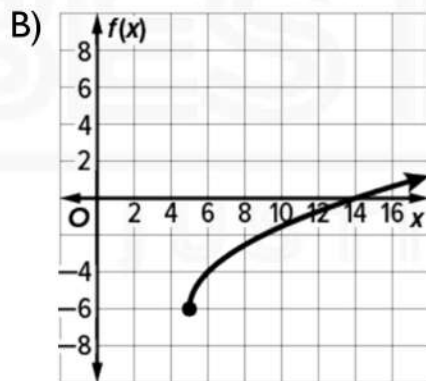
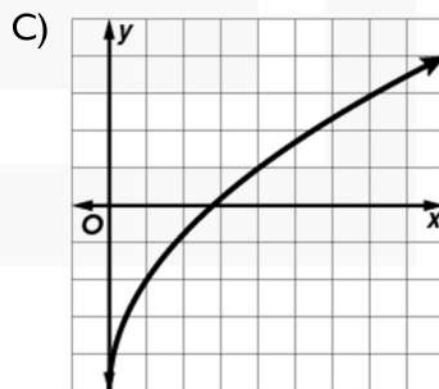
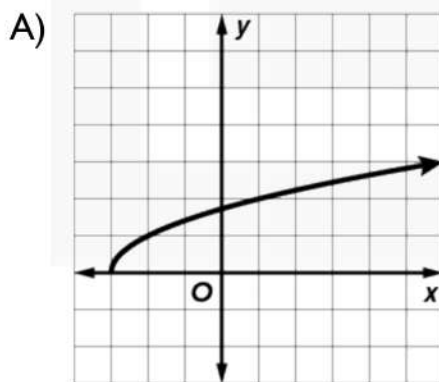
D) $3|x+3|$

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