تجميعة أسئلة القسم الكتابي وفق الهيكل الوزاري منهج ريفيل

موقع المناهج ⇐ المناهج الإماراتية ⇐ الصف الحادي عشر العام ⇐ رياضيات ⇐ الفصل الثاني ⇐ ملفات متنوعة ⇐ الملف
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المزيد من مادة رياضيات:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

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التواصل الاجتماعي بحسب الصف الحادي عشر العام

صفحة المناهج الإماراتية على فيسبوك				
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة رياضيات في الفصل الثاني

FRQ Questions (Writings Questions) (1- 5) الجزء الكتابي

| 1 | Simplify expressions in exponential or radical form | 31-47 | 180 |
| | Write expressions with rational exponents in radical form and vice versa | | |

Simplify.

31. $\sqrt[3]{27b^{18}c^{12}}$

32. $-\sqrt{(2x+1)^6}$

33. $\sqrt[4]{81(x+4)^4}$

33. $\sqrt[3]{(4x-7)^{24}}$

35. $\sqrt[3]{(y^3+5)^{18}}$

36. $\sqrt[4]{256(5x-2)^{12}}$

33. $\sqrt{196c^6d^4}$

33. $\sqrt{-64y^8z^6}$

39. $\sqrt[3]{-27a^{15}b^9}$

40. $\sqrt[3]{-16x^{16}y^8}$

41. $a^{\frac{7}{4}} \cdot a^{\frac{5}{4}}$

42. $x^{\frac{2}{3}} \cdot x^{\frac{8}{3}}$

43. $\left(b^{\frac{3}{4}}\right)^{\frac{1}{3}}$

44. $\left(y^{-\frac{3}{5}}\right)^{-\frac{1}{4}}$

45. $d^{-\frac{5}{6}}$

46. $w^{-\frac{7}{8}}$

47. GEOMETRY The volume V of a regular octahedron with edge length ℓ is given by $V = \frac{\ell^3 \sqrt{2}}{3}$. Write the volume in simplest form for octahedron with the given edge lengths.

  a. $\sqrt{15}$ cm

  b. $\sqrt{24}$ cm

  c. $3\sqrt{8}$ cm

Solve each equation.

1. $5\sqrt{j} = 1$

2. $\sqrt{b-5} = 4$

MCQ

MCQ

3. $\sqrt{3n+1} = 5$

4. $2 + \sqrt{3p+7} = 6$

MCQ

MCQ

5. $\sqrt{k-4} - 1 = 5$

6. $5 = \sqrt{2g-7}$

MCQ

MCQ

7. $\sqrt[3]{3r-6} = 3$

7. $(2d+3)^{\frac{1}{3}} = 2$

MCQ

MCQ

8. $(t-3)^{\frac{1}{3}} = 2$

10. $4 - (1-7u)^{\frac{1}{3}} = 0$

MCQ

MCQ

11. $\sqrt[3]{2v-7} = -2$

12. $4(5n-1)^{\frac{1}{3}} - 1 = 0$

MCQ

MCQ

Solve each equation. Identify any extraneous solutions.

13. $\sqrt{x-15} = 3 - \sqrt{x}$

(FRQ + MCQ)

14. $(5q + 1)^{\frac{1}{4}} + 7 = 5$

(FRQ + MCQ)

15. $(3x + 7)^{\frac{1}{4}} - 3 = 1$

(FRQ + MCQ)

16. $(3y - 2)^{\frac{1}{5}} + 5 = 6$

(FRQ + MCQ)

17. $(4z - 1)^{\frac{1}{5}} - 1 = 2$

(FRQ + MCQ)

18. $\sqrt{x - 10} = 1 - \sqrt{x}$

(FRQ + MCQ)

19. $\sqrt[6]{y + 2} + 9 = 14$

(FRQ + MCQ)

20. $(2x - 1)^{\frac{1}{4}} - 2 = 1$

(FRQ + MCQ)

DOMINOS Kateri wants to set up some dominos so she can knock over one, which knocks over two more, each of which knocks over two more, and so on. If she wants to make 6 rows of dominos, how many will she need in total?

The first row has one domino. So, $a_1 = 1$, $r = 2$, and $n = 6$.

$$S_n = \frac{a_1 - a_1 r^n}{1 - r}$$ Sum formula

$$S_n = \frac{1 - 1(2)^6}{1 - 2}$$ $a_1 = 1$, $r = 2$, and $n = 6$

$$S_n = \frac{-63}{-1}$$ Simplify the numerator and the denominator.

$$S_n = 63$$ Divide.

WATER TREATMENT A certain water filtration system can remove 70% of the contaminants each time a sample of water is passed through it. If the same water is passed through the system four times, what percentage of the original contaminants will be removed from the water sample?

24 $\dfrac{y^2 + 8y + 15}{y - 6} \cdot \dfrac{y^2 - 9y + 18}{y^2 - 9}$

25 $\dfrac{c^2 - 6c - 16}{c^2 - d^2} \div \dfrac{c^2 - 8c}{c + d}$

26 $\dfrac{x^2 + 9x + 20}{8x + 16} \cdot \dfrac{4x^2 + 16x + 16}{x^2 - 25}$

27 $\dfrac{3a^2 + 6a + 3}{a^2 - 3a - 10} \div \dfrac{12a^2 - 12}{a^2 - 4}$

28. $\dfrac{9 - x^2}{x^2 - 4x - 21} \cdot \left(\dfrac{2x^2 + 7x + 3}{2x^2 - 15x + 7}\right)^{-1}$

29. $\left(\dfrac{2x^2 + 2x - 12}{x^2 + 4x - 5}\right)^{-1} \cdot \dfrac{2x^3 - 8x}{x^2 - 2x - 35}$

30. $\left(\dfrac{3xy^3z}{2a^2b^2c}\right)^3 \cdot \left(\dfrac{16a^4b^3c^5}{15x^7y^3z}\right)$

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31. $\left(\dfrac{20x^2y^6z^{-2}}{3a^3c^2}\right) \cdot \left(\dfrac{16x^3y^3}{9acz}\right)^{-1}$

32. $\dfrac{\dfrac{8x^2 - 10x - 3}{10x^2 + 35x - 20}}{\dfrac{2x^2 + x - 6}{4x^2 + 18x + 8}}$

33. $\dfrac{\dfrac{2x^2 + 7x - 30}{-6x^2 + 13x + 5}}{\dfrac{4x^2 + 12x - 72}{3x^2 - 11x - 4}}$

34. $\dfrac{x^2 + 4x - 32}{2x^2 + 9x - 5} \cdot \dfrac{3x^2 - 75}{3x^2 - 11x - 4} \div \dfrac{6x^2 - 18x - 60}{x^3 - 4x}$

35. $\dfrac{8x^2 + 10x - 3}{3x^2 - 12x - 36} \cdot \dfrac{2x^2 - 5x - 12}{3x^2 - 17x - 6} \div \dfrac{4x^2 + 3x - 1}{4x^2 - 40x + 24}$

Graph each function.

1 $f(x) = \dfrac{x^4}{6x + 12}$

Part A Find the zeros.   **Part B** Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$
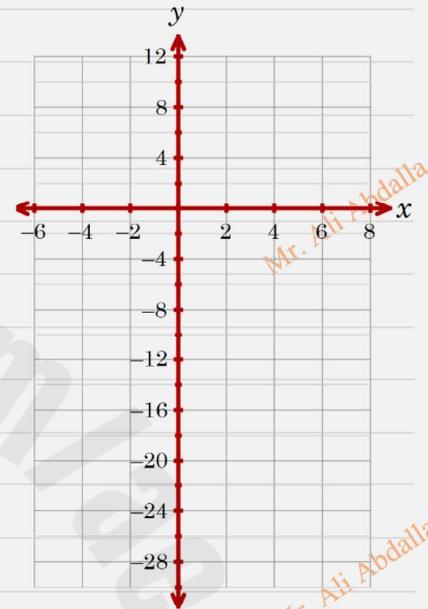
2 $f(x) = \dfrac{x^3}{8x - 4}$

Part A Find the zeros.   **Part B** Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$

3 $f(x) = \dfrac{x^4 - 16}{x^2 - 1}$

Part A Find the zeros.

Part B Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$
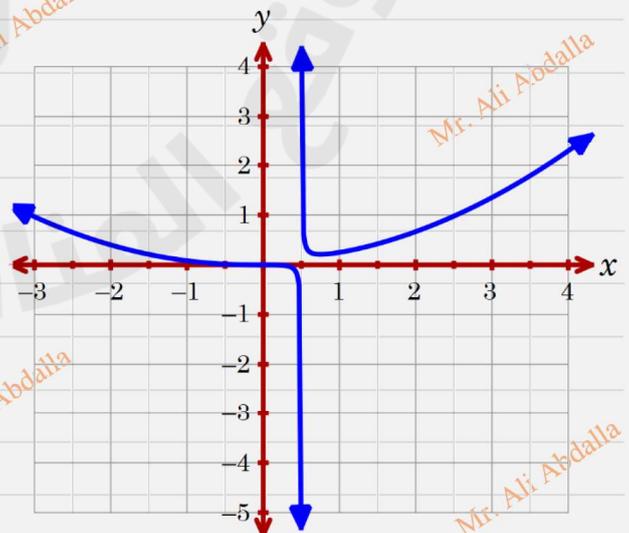
4 $f(x) = \dfrac{x^3 + 64}{16x - 24}$

Part A Find the zeros.

Part B Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$

For Exercises 8-10, consider the given function and the function shown in the graph.

a. Copy the graph. Graph the given function.

b. Which function has the greater y-intercept?

c. Compare the asymptotes of the two functions.

8. $f(x) = \dfrac{x-5}{3x+5}$ and $g(x)$ shown in the graph

Part A Find the zeros.

Part B Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$

	$g(x)$	$f(x)$
y-intercept		
Vertical Asymptote		
Horizontal Asymptote		

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9. $h(x) = \dfrac{x+1}{4x-4}$ and $j(x)$ shown in the graph

Part A Find the zeros.

Part B Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$

	$g(x)$	$f(x)$
y-intercept		
Vertical Asymptote		
Horizontal Asymptote		

10. $f(x) = \dfrac{x - 3}{2x + 7}$ and $g(x)$ shown in the graph

Part A Find the zeros.

Part B Find the asymptotes.

Step 3 Draw the graph.

x	$f(x)$

	$g(x)$	$f(x)$
y-intercept		
Vertical Asymptote		
Horizontal Asymptote		

Example 1 Graph with No Horizontal Asymptotes

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

Step 1 Find the zeros.

Set $a(x) = 0.$

$$x^3 = 0$$

$$x = 0$$

There is a zero at $x = 0.$

Step 2 Find the asymptotes.

Find the vertical asymptote. Set $b(x) = 0.$

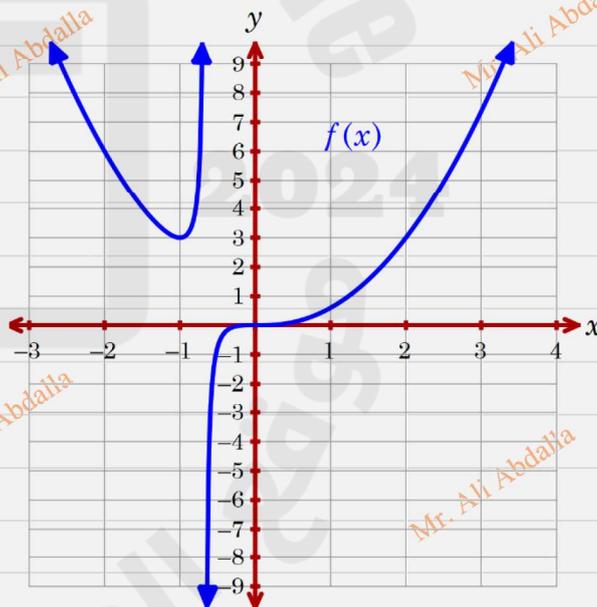$$x + \frac{2}{3} = 0$$

$$x = -\frac{2}{3}$$

There is a vertical asymptote at $x = -\frac{2}{3}.$

Because the degree of the numerator is greater than the degree of the denominator, there is no horizontal asymptote.

Step 3 Draw the graph.

Graph the asymptote. Then make a table of values, and graph.

x	f(x)
−2	6
−1	3
0	0
1	0.6
2	3

Example 3 Compare Rational Functions

Consider $g(x) = \dfrac{x - 2}{2x + 2}$ **and rational function** $h(x)$ **shown in the graph.**

Part A Graph $g(x)$.

Step 1 Find the zeros.

$$x - 2 = 0 \qquad \text{Set } a(x) = 0.$$

$$x = 2 \qquad \text{Add 2 to each side.}$$

There is a zero at $x = 2$.

Step 2 Find the asymptotes.

Find the vertical asymptote.

$$2x + 2 = 0 \qquad \text{Set } b(x) = 0.$$

$$2x = -2 \qquad \text{Subtract 2 from each side.}$$

$$x = -1 \qquad \text{Divide each side by 2.}$$

There is a vertical asymptote at $x = -1$.

Because the degree of the numerator equals the degree of the denominator, the horizontal asymptote is the line

$$y = \frac{\text{leading coefficient of } a(x)}{\text{leading coefficient of } b(x)} \quad \text{or } y = \frac{1}{2}$$

Step 3 Draw the graph.

Draw the asymptotes. Then make a table of values, and graph the ordered pairs.

Part B Which function has the greater y-intercept?

$g(x)$ has a y-intercept of -1. $h(x)$ appears to have a y-intercept at $x = -2$, so its y-intercept is less than -1.

Part C Compare the asymptotes of $g(x)$ and $h(x)$.

vertical asymptotes	$g(x)$: $x = -1$	$h(x)$: $x = 1$
horizontal asymptotes	$g(x)$: $y = \dfrac{1}{2}$	$h(x)$: $y = 1$