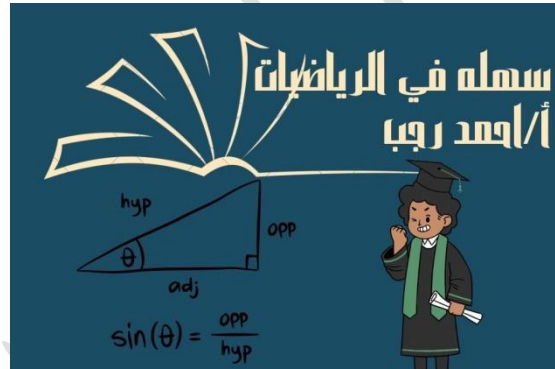




التقويمي الاول لماده رياضيات
الصف الحادي عشر علمي
الفصل الدراسي الاول 2024/2023
اعداد الاستاذ / احمد رجب



بند (1-2) الاسس النسبيه

بسط كلا من :

$$(x^{\frac{1}{2}} \cdot x^{\frac{5}{6}}) \div (x^{\frac{2}{3}})$$

$$(x^{\frac{1}{2} + \frac{5}{6}}) \div (x^{\frac{2}{3}})$$

$$(x^{\frac{8}{6}}) \div (x^{\frac{2}{3}})$$

$$(x^{\frac{8}{6} - \frac{2}{3}}) = x^{\frac{4}{6}} = x^{\frac{2}{3}}$$

$$((\sqrt{x^3 \cdot y^3})^{\frac{1}{3}})^{-1}$$

$$(((x^3 \cdot y^3)^{\frac{1}{2}})^{\frac{1}{3}})^{-1} = (((x \cdot y)^{\frac{3}{2}})^{\frac{1}{3}})^{-1}$$

$$((x \cdot y)^{\frac{1}{2}})^{-1} = (x \cdot y)^{-\frac{1}{2}}$$

$$\frac{1}{(x \cdot y)^{\frac{1}{2}}} = \frac{1}{\sqrt{x \cdot y}}$$

$$\sqrt[3]{\sqrt[3]{729}}$$

$$= \sqrt[6]{729} = \sqrt[6]{3^6} = 3$$

بند (1-3) حل المعادلات

اوجد مجموعه حل المعادله :

$$2 + \sqrt{3x - 2} = 6$$

$$\sqrt{3x - 2} = 6 - 2$$

$$\sqrt{3x - 2} = 4$$

$$(\sqrt{3x - 2})^2 = (4)^2$$

$$3x - 2 = 16$$

$$3x = 18 \quad x = 6 \in \left[\frac{2}{3}, \infty\right)$$

{6}=ح.م

شرط الجذر :

$$3x - 2 \geq 0$$

$$3x \geq 2$$

$$x \geq \frac{2}{3}$$

$$\left[\frac{2}{3}, \infty\right)$$

$$2\sqrt{x - 3} - 3 = 9$$

$$2\sqrt{x - 3} = 9 - 3$$

$$\frac{2}{2}\sqrt{x - 3} = \frac{6}{2}$$

$$\sqrt{x - 3} = 3$$

$$(\sqrt{x - 3})^2 = (3)^2$$

$$x - 3 = 9 \quad x = 12 \in [3, \infty)$$

{12}=ح.م

شرط الجذر :

$$x - 3 \geq 0$$

$$x \geq 3$$

$$[3, \infty)$$

$$\sqrt{x+2} = x$$

$$(\sqrt{x+2})^2 = (x)^2$$

$$x+2 = x^2$$

$$x^2 - x - 2 = 0 \quad \rightarrow \quad (x-2)(x+1) = 0$$

$$x = 2 \in [0, \infty) \quad , \quad x = -1 \notin [0, \infty)$$

$$\{2\} = \text{ح.م}$$

شرط الجذر :

$$x+2 \geq 0$$

$$x \geq -2$$

$$[-2, \infty)$$

او

$$x \geq 0$$

$$[0, \infty)$$

$$\sqrt{5x-1} + 3 = x$$

$$\sqrt{5x-1} = x-3$$

$$(\sqrt{5x-1})^2 = (x-3)^2$$

$$5x-1 = x^2 - 6x + 9 \quad \rightarrow \quad x^2 - 6x - 5x + 9 + 1 = 0$$

$$x^2 - 11x + 10 = 0 \quad \rightarrow \quad (x-10)(x-1) = 0$$

$$x = 10 \in [3, \infty) \quad , \quad x = 1 \notin [3, \infty)$$

$$\{10\} = \text{ح.م}$$

شرط الجذر :

$$5x-1 \geq 0$$

$$x \geq \frac{1}{5}$$

$$\left[\frac{1}{5}, \infty\right)$$

او

$$x-3 \geq 0 \quad x \geq 3$$

$$[3, \infty)$$

اوجد مجموعه حل المعادله :

$$\sqrt{5x} - \sqrt{2x+9} = 0$$

$$\sqrt{5x} = \sqrt{2x+9}$$

$$(\sqrt{5x})^2 = (\sqrt{2x+9})^2$$

$$5x = 2x + 9 \quad \rightarrow \quad 5x - 2x = 9$$

$$3x = 9 \quad x = 3 \in [0, \infty)$$

$$\{3\} = \text{ح.م}$$

شرط الجذر :

$$5x \geq 0$$

$$x \geq 0$$

$$x \in [0, \infty)$$

او

$$2x + 9 \geq 0 \quad x \geq \frac{-9}{2}$$

$$\left[\frac{-9}{2}, \infty\right)$$

اوجد مجموعه حل المعادله :

$$\sqrt{8x} - 2\sqrt{4x-16} = 0$$

$$\sqrt{8x} = 2\sqrt{4x-16}$$

$$(\sqrt{8x})^2 = (2\sqrt{4x-16})^2 \quad \rightarrow \quad 8x = 4(4x-16)$$

$$2x = 4x - 16 \quad \rightarrow \quad 4x - 2x = 16$$

$$2x = 16 \quad \rightarrow \quad x = 8 \in [4, \infty)$$

$$\{8\} = \text{ح.م}$$

شرط الجذر :

$$8x \geq 0$$

$$x \geq 0$$

$$x \in [0, \infty)$$

او

$$4x - 16 \geq 0 \quad x \geq 4$$

$$[4, \infty)$$

اوجد مجموعه حل :

$$2(x - 2)^{\frac{2}{3}} = 50$$

$$\frac{2}{2}(x - 2)^{\frac{2}{3}} = \frac{50}{2}$$

$$(x - 2)^{\frac{2}{3}} = 25 \rightarrow ((x - 2)^{\frac{2}{3}})^{\frac{3}{2}} = (25)^{\frac{3}{2}}$$

$$|x - 2| = 125$$

$$x - 2 = 125 \text{ او } x - 2 = -125$$

$$x = 127 \text{ او } x = -123$$

$$\{127, -123\} = \text{ح.م}$$

اوجد مجموعه حل :

$$2(x + 2)^{\frac{3}{2}} = 54$$

$$\frac{2}{2}(x + 2)^{\frac{3}{2}} = \frac{54}{2}$$

$$\rightarrow ((x + 2)^{\frac{3}{2}})^{\frac{2}{3}} = (27)^{\frac{2}{3}}$$

$$x + 2 = 9 \rightarrow x = 9 - 2 = 7$$

$$\{7\} = \text{ح.م}$$

اوجد مجموعه حل :

$$3^{x^2+5x} = \frac{1}{81}$$

$$3^{x^2+5x} = \frac{1}{3^4}$$

$$3^{x^2+5x} = 3^{-4}$$

$$x^2 + 5x = -4 \rightarrow x^2 + 5x + 4 = 0$$

$$(x + 1)(x + 4) = 0$$

$$x = -1 \text{ او } x = -4$$

$$\{-1, -4\} = \text{ح.م}$$

اوجد مجموعه حل :

$$5^{x^2-4} = 1$$

$$5^{x^2-4} = 5^0$$

$$x^2 - 4 = 0$$

$$(x - 2)(x + 2) = 0$$

$$x = 2 \text{ او } x = -2$$

$$\{2, -2\} = \text{ح.م}$$

بند (2-1) مجال الداله

اوجد مجال الداله :

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

مجال البسط

$$a(x) = 2x - 1$$

داله كثيره حدود مجالها R

مجال المقام

$$b(x) = \sqrt{3 + x}$$

$$3 + x \geq 0 \rightarrow x \geq -3$$

$$[-3, \infty) = \text{المجال}$$

اصفار المقام

$$\sqrt{3 + x} = 0 \rightarrow 3 + x = 0$$

$$x = -3$$

$$R \cap [-3, \infty) / \{-3\} = \text{مجال } f$$

$$= (-3, \infty)$$

اوجد مجال الداله :

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

اوجد مجال الداله :

$$h(x) = \frac{\sqrt[3]{1+x}}{x^2-1}$$

مجال البسط

$$a(x) = \sqrt[3]{1+x}$$

داله جذر تكعيبي مجالها R

مجال المقام

$$b(x) = x^2 - 1$$

$$3 + x \geq 0 \rightarrow x \geq -3$$

داله كثيره حدود مجالها R

اصفار المقام

$$x^2 - 1 = 0 \rightarrow (x - 1)(x + 1) = 0$$

$$x = -1 \text{ او } x = 1$$

$$R \cap R/\{-1, 1\} = f \text{ مجال}$$

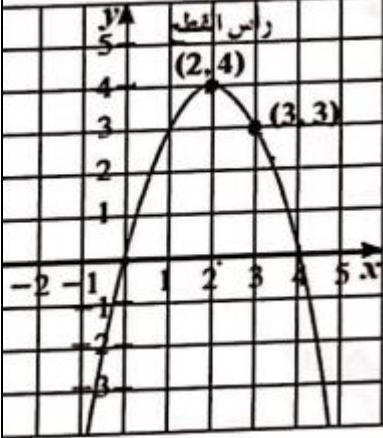
$$= R - \{-1, 1\}$$

اوجد مجال الداله :

$$g(x) = \frac{\sqrt{x-2}}{x-3}$$

بند (2-3) القطوع المكافئه

اوجد معادله القطع المكافئ في الرسم المقابل



راس القطع $(2, 4) = (h, k)$

ويمر بالنقطه $(3, 3) = (x, y)$

معادله القطع المكافئ

$$Y = a(x-h)^2 + k$$

$$3 = a(3 - 2)^2 + 4$$

$$3 = a + 4$$

$$a = 3 - 4 = -1$$

معادله القطع المكافئ :

$$Y = -(x-2)^2 + 4$$

ارسم منحنى الداله :

$$Y = (x + 3)^2 + 1$$

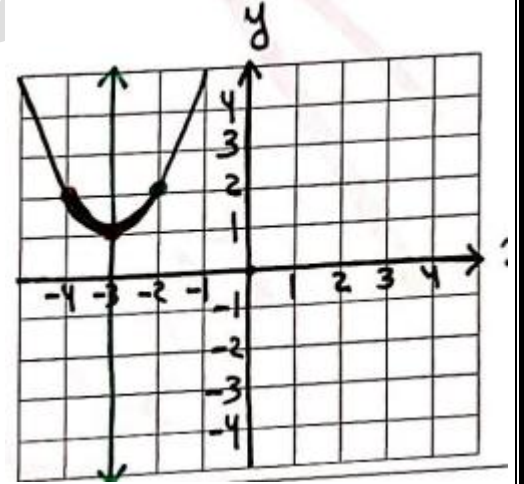
$$a=1 , h=-3 , k=1$$

مفتوح لاعلى $a > 0$

راس المنحنى $(-3, 1)$

محور التماثل $X=h = -3$

X	-2	-3	-4
y	2	1	2



ارسم منحنى الداله :

$$Y = -2(x - 3)^2 - 1$$