وزارة التربية والتعليم و التعليم الفنى
الإدارة المركزية للتعليم العام
إدارة تنمية مادة الرياضيات

برعاية معالي وزير التربية والتعليم و التعليم الفنى
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وتوجيهات رئيس الإدارة المركزية للتعليم العام

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مستشار الرياضيات

أ/ منال عزقول

أداءات وتقييمات لمنهج الرياضيات البحتة لغات

للصف الثانى الثانوي "علمى"

الفصل الدراسى الأول

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الأسبوع التاسع

لجنة الإعداد

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ترجمة

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مراجعة الترجمة

أ/ شريف البرهامى

Algebra: Exercises on Rational exponents.

1) Find in the simplest form each of:

a) $\sqrt[3]{-64\,a^9\,b^{12}}$ b) $\sqrt[4]{81\,x^{12}\,y^{16}}$ c) $\sqrt{\frac{1}{16}x^6\,y^{10}}$

Solu: .....

2) Determine which of the following is an exponential function, then write its exponent and its base:

a) $f(x)=\frac{6}{5}(2)^x$ b) $f(x)=(-3)^x$ c) $f(x)=(\frac{1}{5})^x-1$

Solu: .....

3) If the function f : $f(x)=3^x$

Find each of the following : $f(-1)$, $f(2)$, $f(x-1)$, $f(x)\times f(-x)$

Solu: .....

4) Find in R the solution set of the following equation: $(x+25)^{\frac{4}{3}}=81$

Solu: .....

5) Find in R the solution set of the following equation: $(2x+3)^{\frac{3}{4}} - 27 = 0$

Solu: .....

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Calculus: Exercises on Limit of a function at infinity

6) Find: $\lim\limits_{x\to\infty} \left(\frac{x^2+3x}{x+5} - \frac{x^2+7}{x+5}\right)$

Solu: .....

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7) Find: $\lim\limits_{x\to\infty} \left(\sqrt{4x^2-2x} - 2x\right)$

Solu: .....

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Exercises on Cosine Rule

8) ABC is a triangle in which: a = 6 cm, c = 10 cm, m (∠ B) = 120°, find the length of b.

Solu: .....

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9) ABC is a triangle in which: a = 3 cm, m (∠ B) = 120° and its surface area = $10\sqrt{3}$ cm^2 , find the length of each of c , b.

Solu: .....

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10) ABC is a triangle in which: $\cos A = \frac{2}{5}$, b = 2.5 cm and c = 2 cm.

Prove that Δ ABC is an isosceles triangle

Solu: .....

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Algebra: Exercises on Rational exponents.

1) Find in the simplest form each of:

a) $\sqrt[3]{-27\,a^3\,b^6}$ b) $\sqrt[4]{16\,x^4\,y^8}$ c) $\sqrt[5]{32\,x^5\,y^{15}}$

Solu: .....

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2) Determine which of the following is an exponential function, then write its exponent and its base:

a) $f(x) = \frac{8}{9}(3)^x$ b) $f(x) = (-4)^x$ c) $f(x) = (\frac{1}{2})^{x-1}$

Solu: .....

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3) If the function f : $f(x) = 2^x$

Find each of the following : $f(-2)$, $f(3)$, $f(x+1)$, $f(x) \times f(-x)$

Solu: .....

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4) Find in R the solution set of the following equation: $(x-1)^{\frac{4}{3}} = 16$

Solu: .....

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5) Find in R the solution set of the following equation: $(2x+3)^{\frac{3}{4}} - 8 = 0$

Solu: .....

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Calculus: Exercises on Limit of a function at infinity

6) Find: $\lim\limits_{x\to\infty} \left(\frac{x^2+4x}{x+2} - \frac{x^2+5}{x+2}\right)$

Solu: .....

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7) Find: $\lim\limits_{x\to\infty} \left(\sqrt{9x^2+6x} - 3x\right)$

Solu: .....

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Exercises on Cosine Rule

8) ABC is a triangle in which: a = 9 cm, c = 15 cm, m (∠ B) = 120°, find the length of b.

Solu: .....

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9) ABC is a triangle in which: b = 9 cm, m (∠ B) = 30° and its surface area = 27 cm^2, find the length of each of c , a.

Solu: .....

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10) ABC is a triangle in which: cos A = $\frac{2}{5}$, b = 5 cm and c = 4 cm.

Prove that Δ ABC is an isosceles triangle

Solu: .....

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The First Group

1) If the function f : f $(x) = \left(\frac{1}{3}\right)^x$

Find each of the following : f (-2) , f (3) , f $(x+2)$, f $(x) \times$ f $(-x)$

Solu: .....

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2) If the point A (4 , 30) belongs to the curve of the function f : f $(x) = \left(\frac{1}{5}\right)^{x-6} + k$

then find the value of k

Solu: .....

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3) Find in R the solution set of the following equation: $(x+2)^{\frac{3}{4}} - 1 = 0$

Solu: .....

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4) Find: $\lim_{x \to \infty} \left(\frac{x^2 + 5x}{x+3} - \frac{x^2+1}{x+3}\right)$

Solu: .....

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5) ABC is a triangle in which: a = 12 cm, c = 20 cm, m $(\angle B) = 120^o$ find the length of b.

Solu: .....

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The Second Group

1) If the function f : $f(x) = \left(\frac{1}{5}\right)^x$

Find each of the following : $f(-1)$, $f(2)$, $f(x-2)$, $f(x) \times f(-x)$

Solu: .....

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2) If the point A $(-1, 15)$ belongs to the curve of the function f : $f(x) = (3)^{4x+6} + k$ then find the value of k

Solu: .....

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3) Find in R the solution set of the following equation: $(x+15)^{\frac{3}{4}} - 8 = 0$

Solu: .....

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4) Find: $\lim_{x \to \infty} \left(\frac{x^2+4}{x+6} - \frac{x^2-3x}{x+6}\right)$

Solu: .....

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5) ABC is a triangle in which: a = 15 cm, c = 25 cm, m (∠ B) = 120° find the length of b.

Solu: .....

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The Third Group

1) If the function f : f $(x) = \left(\frac{1}{4}\right)^{x}$

Find each of the following : f (-1) , f (3) , f $(x-1)$, f $(x) \times$ f $(-x)$

Solu: .....

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2) If the point A $(-1 , 10)$ belongs to the curve of the function f : f $(x) = (2)^{3x+5} + k$ then find the value of k

Solu: .....

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3) Find in R the solution set of the following equation: $(x+8)^{\frac{3}{4}} - 27 = 0$

Solu: .....

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4) Find: $\lim_{x \to \infty} \left(\frac{x^2+9}{x+4} - \frac{x^2-5x}{x+4}\right)$

Solu: .....

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5) ABC is a triangle in which: a = 18 cm, c = 30 cm, m $(\angle B) = 120^{o}$ find the length of b.

Solu: .....

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