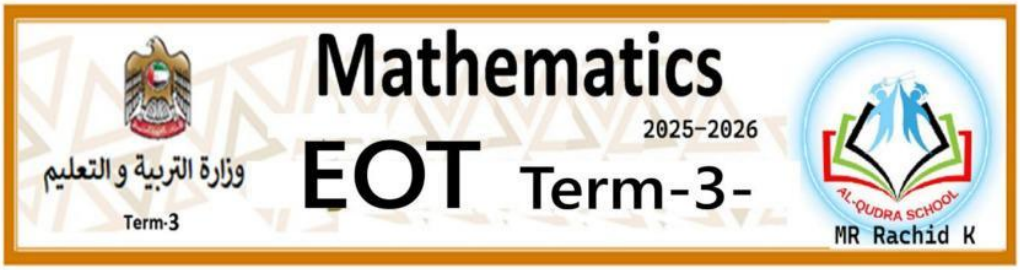

الصف الثاني عشر عام

Grade 12 General

نموذج اختبار-1-

2025-2026

جزء-1-

Q1

Simplify the rational expression:

$$\frac{(6x^2 - 5xy)(x + 2y)}{(x + y)(5y - 6x)}$$

- ○ $\frac{x(x+2y)}{x+y}$
- ○ $-\frac{x(x+2y)}{x+y}$
- ○ $\frac{x(x+y)}{x+y}$
- ○ $-\frac{x(x+2y)}{x-y}$

Simplify:

Q2

$$\frac{\frac{x^2-9y^2}{xy}}{\frac{2x+6y}{x^2}}$$

- ○ $\frac{x(x-y)}{y}$
- ○ $\frac{x(x+3y)}{2y}$
- ○ $\frac{x(x-3y)}{2y}$
- ○ $\frac{x(x-y)}{2y}$

Q3

What algebraic method is primarily used to find the equation of an oblique asymptote?

- ○ Long or Synthetic Division
- ○ Factoring by grouping
- ○ Substitution
- ○ Graphical plotting only

Simplify the rational expression:

Q4

$$\frac{9x^2 - x^3}{x^2 - 3x - 54}$$

- ○ $-\frac{x^2}{x+6}$
- ○ $\frac{x^2}{x+3}$
- ○ $\frac{x^2}{x+6}$
- ○ $-\frac{x^2}{x-3}$

Q5

Find a negative coterminal angle for $35°$:

- ○ $-325°$
- ○ $395°$
- ○ $310°$
- ○ $-410°$

Q6

If the degree of the numerator polynomial is less than the degree of the denominator polynomial, the horizontal asymptote is:

- ○ $x = 0$
- ○ $y = 1$
- ○ $y = 0$
- ○ No horizontal asymptote

Q7

Which value is NOT in the domain of the parent reciprocal function $f(x) = \frac{1}{x}$?

- ○ 3
- ○ $\frac{1}{3}$
- ○ 2
- ○ 0

Q8

What is the value of x for which the reciprocal function $f(x) = \frac{2}{-2x+5}$ is undefined?

- ○ $x = \frac{5}{2}$
- ○ $x = 3$
- ○ $x = 0$
- ○ $x = -\frac{7}{3}$

Q9

Simplify the rational expression:

$$\frac{(7y - 3x)(5x - 1)}{(5x^3 + x^2)(3x - 7y)}$$

- ○ $-\frac{5x-1}{x^2(5x+1)}$
- ○ $\frac{(7y-3x)(5x-1)}{x^2(5x+1)(3x-7y)}$
- ○ $\frac{1}{x^2}$
- ○ $\frac{5x-1}{5x^3+x^2}$

Q10

(Check unit circle)The point $P\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ on the unit circle lies in which quadrant?

- ○ Quadrant I
- ○ Quadrant II
- ○ Quadrant III
- ○ Quadrant IV

Q11

A rational function has an oblique asymptote when:

- ○ Degree of numerator minus degree of denominator equals 1
- ○ Degree of denominator is greater
- ○ Degree of denominator minus degree of numerator equals 1
- ○ Degree of numerator equals denominator

Q12

What type of graph is produced by the parent reciprocal function $f(x) = \frac{1}{x}$?

- ○ Parabola
- ○ Circle
- ○ Hyperbola
- ○ Line

Q13

Simplify:

$$\frac{3}{8p^2r} + \frac{5}{4p^2r}$$

- ○ $\frac{13}{8p^2r}$
- ○ $\frac{12}{8p^2r}$
- ○ $\frac{12}{8pr}$
- ○ $\frac{13}{8p^2r^2}$

Q14

If the terminal side of angle θ intersects the unit circle at $P\left(-\frac{12}{13}, \frac{5}{13}\right)$, find $\cos\theta$ and $\sin\theta$:

- ○ $\cos\theta = \frac{5}{13}, \sin\theta = \frac{12}{13}$
- ○ $\cos\theta = \frac{5}{13}, \sin\theta = -\frac{12}{13}$
- ○ $\cos\theta = -\frac{12}{13}, \sin\theta = \frac{5}{13}$
- ○ $\cos\theta = -\frac{12}{13}, \sin\theta = -\frac{5}{13}$

Q15

Find a positive coterminal angle for $-50°$:

- ○ $-325°$
- ○ $395°$
- ○ $310°$
- ○ $-410°$