



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°