

الصف الثاني عشر عام
Grade 12 General

نموذج اختبار -1-

2025-2026

جزء -2-

Q16

Simplify:

$$\frac{14xy^2z^3}{21w^4x^2z} \cdot \frac{7wxyz}{12w^2y^3z}$$

☐ $\frac{z^2}{18w^3}$

☐ $\frac{7z}{18w^5}$

☐ $\frac{7z^2}{18w^5}$

☐ $\frac{7z}{18w^2}$

Q17

Find the horizontal asymptote of: $f(x) = \frac{2x+1}{x^3-4}$

☐ $y = 0$

☐ $y = \frac{5}{3}$

☐ $y = \frac{3}{5}$

☐ No horizontal asymptote

Q18

What is the parent reciprocal function?

☐ $f(x) = x^2$

☐ $f(x) = \frac{1}{x}$

☐ $f(x) = |x|$

☐ $f(x) = x$

Q19

Which statement is true about the x-intercept of the parent function

$$f(x) = \frac{1}{x}?$$

☐ It has one x-intercept

☐ It has two x-intercepts

☐ It has infinitely many

☐ None

Q20

Which value is NOT in the range of the parent reciprocal function

$$f(x) = \frac{1}{x}?$$

☐ 3

☐ $\frac{1}{3}$

☐ 2

☐ 0

Q21

What is the amplitude of the parent sine function $y = \sin x$?

☐ 0

☐ 1

☐ 360

☐ -1

Q22

Identify the quadrants in which the graph of $f(x) = \frac{1}{x}$ lies:

☐ Quadrants I and II

☐ Quadrants II and III

☐ Quadrants I and III

☐ Quadrants III and IV

Q23

What is the horizontal asymptote of the parent function $f(x) = \frac{1}{x}$?

☐ $x = 0$

☐ $y = 1$

☐ $y = 0$

☐ $x = 1$

Q24

Simplify the product of the rational expressions:

$$\frac{3x}{8y} \cdot \frac{12x^2y}{9xy^3}$$

☐ $\frac{y^3}{2x^2}$

☐ $\frac{x^2}{8y^3}$

☐ $\frac{x}{72y^3}$

☐ $\frac{x^2}{2y^3}$

Q25

Simplify the complex rational expression:

$$\frac{\frac{3x}{x-y}}{\frac{6xy}{x^2-y^2}}$$

☐ $\frac{x+y}{y}$

☐ $\frac{x-y}{y}$

☐ $\frac{x+y}{2y}$

☐ $\frac{2(x+y)}{y}$

Q26

If the terminal side of angle θ intersects the unit circle at $P\left(-\frac{4}{5}, -\frac{3}{5}\right)$, find $\cos \theta$ and $\sin \theta$:

☐ $\cos \theta = -\frac{3}{5}, \sin \theta = -\frac{4}{5}$

☐ $\cos \theta = -\frac{4}{5}, \sin \theta = -\frac{3}{5}$

☐ $\cos \theta = \frac{3}{5}, \sin \theta = \frac{4}{5}$

☐ $\cos \theta = -\frac{5}{4}, \sin \theta = -\frac{3}{5}$

Q27

An angle of 475° in standard position has its terminal side in:

☐ Quadrant I

☐ Quadrant II

☐ Quadrant III

☐ Quadrant IV

Q28

Determine the coordinate x of the hole (point discontinuity) in the

function $f(x) = \frac{x^2-4}{x+2}$

☐ $x = -3$

☐ $x = 4$

☐ $x = -2$

☐ $x = 8$

Q29

Simplify the quotient:

$$\frac{10d^5}{6cd} \div \frac{30c^3d^2}{4c}$$

☐ $\frac{d}{9c^3}$

☐ $\frac{2d^2}{9c^3}$

☐ $\frac{d^2}{9c^3}$

☐ $\frac{2d}{9c^2}$

Q30

What is the vertical asymptote of the parent function $f(x) = \frac{1}{x}$?

☐ $x = 0$

☐ $y = 1$

☐ $y = 0$

☐ $x = 1$