

MATHEMATICS

End of Term Examination • Term 3

Grade 12 General



EOT • 30 Questions
2025 - 2026

Student Name: _____

Class: _____

Date: _____

Score: _____

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Q1 Simplify the Rational Expression

$$(6x^2 - 5xy)(x + 2y) / [(x + y)(5y - 6x)]$$

A) $x(x+2y)/(x+y)$

B) $-x(x+2y)/(x+y)$

C) $x(x+y)/(x+y)$

D) $-x(x+2y)/(x-y)$

Answer

Q2 Simplify — Multiplication of Rational Expressions

$$(3x/8y) \cdot (12x^2y/9xy^3)$$

A) $y^3/2x^2$

B) $x^2/8y^3$

C) $x/72y^3$

D) $x^2/2y^3$

Answer

Q3 Simplify — Division of Rational Expressions

$$(10d^2/6cd) \div (30c^3d^2/4c)$$

A) $d/9c^3$

B) $2d^2/9c^3$

C) $d^2/9c^3$

D) $2d/9c^2$

Answer

Q4 Simplify — Complex Fraction

$$(3x/(x-y)) / (6xy/(4x^2-4y^2))$$

A) $(x+y)/y$

B) $(x-y)/y$

C) $2(x-y)/y$

D) $2(x+y)/y$

Answer

Q5 Add/Subtract Rational Expressions

$$7a/4b + 4c^2/10$$

A) $(a+8bc^2)/22b$

B) $(35a+8bc)/20b^2$

C) $(35a+8bc^2)/20b$

D) $(35a-8c^2)/20b$

Answer

Q6 Add/Subtract with Unlike Denominators

$$2x/9y - 7y/6z$$

A) $(2xz-21y^2)/18yz$

B) $(4xz-21y^2)/18yz$

C) $(2xz+21y^2)/18y^2z$

D) $(4xz-y^2)/18y^2z$

Answer

Q7 Add Rational Expressions — Factor First

$$(2x+1)/(x^2+2x-15) - 7/(5x-15)$$

A) $(3x-30)/[5(x-3)(x+5)]$

B) $(3x+30)/[(x-3)(x+5)]$

C) $(3x-30)/[(x+3)(x+5)]$

D) $(3x-30)/[5(x-3)(x-5)]$

Answer

Q8 Parent Reciprocal Function — Properties

Which value is NOT in the domain of $f(x) = 1/x$?

A) 3

B) $1/3$

C) 2

D) 0

Answer

Q9 Graph the Reciprocal Function

For $g(x) = 1/(x-1) + 3$: what are the vertical and horizontal asymptotes?

A) V.A: $x=3$, H.A: $y=1$

B) V.A: $x=1$, H.A: $y=3$

C) V.A: $x=-1$, H.A: $y=3$

D) V.A: $x=3$, H.A: $y=-1$

Answer

Q10 Values for which $f(x)$ is Undefined

For $f(x) = 2/(-2x+5)$, find x where $f(x)$ is undefined.

A) $x = 5/2$

B) $x = 3$

C) $x = 0$

D) $x = -7/3$

Answer

Q11 Horizontal Asymptote Rules

Find the horizontal asymptote of $f(x) = (3x^2+1)/(5x^2-2)$

A) $y = 0$

B) $y = 5/3$

C) $y = 3/5$

D) No horizontal asymptot

Answer

Q12 Oblique (Slant) Asymptote

Which function has an oblique asymptote?

A) $(x^2-1)/(x^2-4)$

B) $(x^2+3x+1)/(x+1)$

C) $(x+2)/(x^3+1)$

D) $5/(x-2)$

Answer

Q13 Point Discontinuity

Find the point of discontinuity for $f(x) = (x^2-4)/(x+2)$

A) $x = -3$

B) $x = 4$

C) $x = -2$

D) $x = 8$

Answer

Q14 Solve Rational Equation

$$7/12 + 9/(x-4) = 55/48$$

A) $x = 1/2$ and $7/4$

B) $x = 20$

C) $x = 7$

D) $x = 1/2$

Answer

Q15 Solve Rational Equation — Complex

$$14/(x-2) - 18/(x+1) = 22/(x^2-x-2)$$

A) $x = 1/2$ and $7/4$

B) $x = 20$

C) $x = 7$

D) $x = 1/2$

Answer

Q16 Angles in Standard Position

A 200° angle in standard position has its terminal side in:

A) Quadrant I

B) Quadrant II

C) Quadrant III

D) Quadrant IV

Answer

Q17 Coterminal Angles

Find a positive coterminal angle for 35° .

A) -325°

B) 395°

C) 310°

D) -410°

Answer

Q18 Degrees \leftrightarrow Radians Conversion

Rewrite -100° in radians.

A) $-11\pi/9$

B) $11\pi/9$

C) $-5\pi/9$

D) $5\pi/9$

Answer

Q19 Arc Length Formula

A wheel has radius 10 cm and rotates through $3\pi/5$ radians. Find arc length s .

A) 2π cm

B) 15π cm

C) 3π cm

D) 6π cm

Answer

Q20 Trig Ratios from Right Triangle

In a right triangle with sides 8, 15, 17 — find $\sin \theta$ (angle opposite side 8).

A) $15/8$

B) $15/17$

C) $8/17$

D) $8/15$

Answer

Q21 Reciprocal Trig Functions

If $\sin \theta = 3/5$, find $\csc \theta$.

A) $17/8$

B) $2\sqrt{22/13}$

C) $5/3$

D) $12/5$

Answer

Q22 Reference Angles

Find the reference angle for 155° .

- A) 45° B) 30° C) 25° D) 60° Answer

Q23 Exact Trig Values

Find the exact value of $\tan(7\pi/4)$.

- A) -1 B) $\sqrt{2}$ C) $-\sqrt{2}/2$ D) $12/5$ Answer

Q24 Unit Circle — Point to Angle

The point $P(-12/13, 5/13)$ is on the unit circle. Find $\cos \theta$ and $\sin \theta$.

- A) $\cos=5/13, \sin=12/13$ B) $\cos=5/13, \sin=-12/13$ C) $\cos=-12/13, \sin=5/13$ D) $\cos=-12/13, \sin=-5/13$ Answer

Q25 Period of Trig Functions (from Graph)

A sine wave completes one full cycle from 0 to 10 on the θ -axis. What is the period?

- A) 10 B) 2π C) $5\pi/2$ D) 5 Answer

Q26 Properties of $y = \sin x$ and $y = \cos x$

What is the range of the parent function $y = \cos x$?

- A) $0 \leq y \leq 1$ B) All real numbers C) $-1 \leq y \leq 1$ D) $-360 \leq y \leq 360$ Answer

Q27 Amplitude of Trig Functions

Find the amplitude of $y = (3/4)\cos \theta$.

- A) $3/4$ B) 2 C) 1 D) $1/2$ Answer

Q28 Period of $y = a \sin bx / a \cos bx$

Find the period of $y = \cos(1/2)\theta$.

A) 90°

B) 720°

C) 180°

D) 360°

Answer

Q29 Tangent Function — Properties

For $y = \tan 3x$, find the period.

A) 360°

B) 45°

C) 720°

D) 60°

Answer

Q30 Reciprocal Trig Functions — sec, csc, cot

What is the range of $y = \csc x$?

A) $y \leq -1$ or $y \geq 1$

B) $-1 \leq y \leq 1$

C) 360

D) All real numbers

Answer