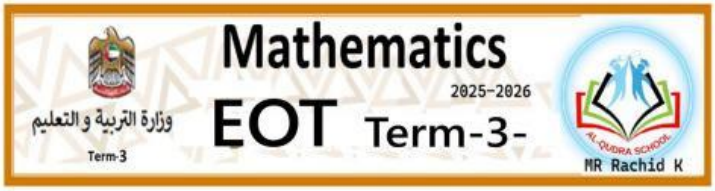


الصف الثاني عشر عام

Grade 12 General

EOT-Q1--15-

جزء-1-

2025-2026

Q1

Simplify each expression.

$\frac{(6x^2-5xy)(x+2y)}{(x+y)(5y-6x)}$	$\frac{(7y-3x)(5x-1)}{(5x^3+x^2)(3x-7y)}$	$\frac{9x^2-x^3}{x^2-3x-54}$	$\frac{16-c^2}{c^2+c-20}$
$A)\ \frac{x(x+2y)}{x+y}$ $B)\ -\frac{x(x+2y)}{x+y}$ $C)\ \frac{x(x+y)}{x+y}$ $D)\ \frac{-x(x+2y)}{x-y}$	$A)\ -\frac{5x-1}{x^2(5x+1)}$ $B)\ \frac{(7y-3x)(5x-1)}{x^2(5x+1)(3x-7y)}$ $C)\ \frac{1}{x^2}$ $D)\ \frac{5x-1}{5x^3+x^2}$	$A)\ -\frac{x^2}{x+6}$ $B)\ \frac{x^2}{x+3}$ $C)\ \frac{x^2}{x+6}$ $D)\ -\frac{x^2}{x-3}$	$A)\ \frac{c-4}{c+5}$ $B)\ -\frac{c+4}{c-2}$ $C)\ \frac{c-4}{c+2}$ $D)\ -\frac{c+4}{c+5}$

Q2

Simplify each expression.

$\frac{3x}{8y} \cdot \frac{12x^2y}{9xy^3}$	$\frac{10d^5}{6cd} \div \frac{30c^3d^2}{4c}$	$\frac{14xy^2z^3}{21w^4x^2z} \cdot \frac{7wxyz}{12w^2y^3z}$	$\frac{64a^2b^5}{35b^2c^3f^4} \div \frac{12a^4b^3c}{70abcf^2}$
A) $\frac{y^3}{2x^2}$	A) $\frac{d}{9c^3}$	A) $\frac{z^2}{18w^3}$	A) $\frac{32b}{3ac^3f^2}$
B) $\frac{x^2}{8y^3}$	B) $\frac{2d^2}{9c^3}$	B) $\frac{7z}{18w^5}$	B) $\frac{32b}{ac^3f^2}$
C) $\frac{x}{72y^3}$	C) $\frac{d^2}{9c^3}$	C) $\frac{7z^2}{18w^5}$	C) $\frac{32ba^{-1}}{3cf}$
D) $\frac{x^2}{2y^3}$	D) $\frac{2d}{9c^2}$	D) $\frac{7z}{18w^2}$	D) $\frac{32b}{3ac^3f^3}$

Q_3

Simplify each expression.

$\frac{\frac{3x}{x-y}}{\frac{6xy}{4x^2-4y^2}}$	$\frac{\frac{x^2-9y^2}{xy}}{\frac{2x+6y}{x^2}}$	$\frac{\frac{y-x}{z^3}}{\frac{x-y}{6z^2}}$	$\frac{\frac{a^2-b^2}{b^3}}{\frac{b^2-ab}{a^2}}$
$A)\ \frac{(x+y)}{y}$ $B)\ \frac{(x-y)}{y}$ $C)\ \frac{2(x-y)}{y}$ $D)\ \frac{2(x+y)}{y}$	$A)\ \frac{x(x-y)}{y}$ $B)\ \frac{x(x+3y)}{2y}$ $C)\ \frac{x(x-3y)}{2y}$ $D)\ \frac{x(x-y)}{2y}$	$A)\ -\frac{6}{z}$ $B)\ \frac{6}{z}$ $C)\ \frac{3}{z}$ $D)\ -\frac{3}{z}$	$A)\ \frac{a^2(a+b)}{b^4}$ $B)\ \frac{a(a+b)}{b^3}$ $C)\ \frac{a+b}{b^3}$ $D)\ \frac{a-b}{b^4}$

Q4

Simplify each expression.

$\frac{7a}{4b}+\frac{4c^2}{10}$	$\frac{2x}{9y}-\frac{7y}{6z}$	$\frac{3}{x}+\frac{5}{y}$	$\frac{3}{8p^2r}+\frac{5}{4p^2r}$
A) $\frac{a+8bc^2}{22b}$ B) $\frac{35a+8bc}{20b^2}$ C) $\frac{35a+8bc^2}{20b}$ D) $\frac{35a-8c^2}{20b}$	A) $\frac{2xz-21y^2}{18yz}$ B) $\frac{4xz-21y^2}{18yz}$ C) $\frac{2xz+21y^2}{18y^2z}$ D) $\frac{4xz-y^2}{18y^2z}$	A) $\frac{5x-3y}{xy}$ B) $\frac{5x+3y}{xy}$ C) $\frac{5x-3y}{x^2y}$ D) $\frac{5x+3y}{xy^2}$	A) $\frac{13}{8p^2r}$ B) $\frac{12}{8p^2r}$ C) $\frac{12}{8pr}$ D) $\frac{13}{8p^2r^2}$

Q5

Simplify each expression.

$\frac{2x+1}{x^2+2x-15} - \frac{7}{5x-15}$	$\frac{3x}{4x^2+4} - \frac{2x^2}{x^4-1}$	$\frac{3t}{2-x} + \frac{5}{x-2}$	$\frac{n}{n-3} + \frac{2n+2}{n^2-2n-3}$
A) $\frac{3x-30}{5(x-3)(x+5)}$ B) $\frac{3x+30}{(x-3)(x+5)}$ C) $\frac{3x-30}{(x+3)(x+5)}$ D) $\frac{3x-30}{5(x-3)(x-5)}$	A) $\frac{3x^3-8x^2}{4(x^2+1)(x^2-1)}$ B) $\frac{3x^3-8x^2}{4(x+1)(x-1)}$ C) $\frac{3x^3-8x^2-3x}{4(x+1)(x-1)}$ D) $\frac{3x^3-8x^2-3x}{4(x^2+1)(x^2-1)}$	A) $\frac{5-3t}{x-2}$ B) $\frac{5+3t}{x-2}$ C) $\frac{3+5t}{x+2}$ D) $\frac{3-5t}{x-2}$	A) $\frac{n+2}{n+3}$ B) $\frac{n-2}{n-3}$ C) $\frac{n+2}{n-3}$ D) $\frac{n-2}{n+3}$

Q6

What is the parent reciprocal function?	What type of graph does $f(x)=\frac{1}{x}$ produce?	Which value is NOT in the domain of $f(x)=\frac{1}{x}$?	Which value is NOT in the range of $f(x)=\frac{1}{x}$?
$A)\ x^2$ $B)\ \frac{1}{x}$ $C)\ \lvert x\rvert$ $D)\ \sqrt{x}$	$A)$ Parabola $B)$ Circle $C)$ Hyperbola $D)$ Line	$A)\ 3$ $B)\ \frac{1}{3}$ $C)\ 2$ $D)\ 0$	$A)\ 3$ $B)\ \frac{1}{3}$ $C)\ 2$ $D)\ 0$

What is the vertical asymptote of $f(x)=\frac{1}{x}$?	What is the horizontal asymptote of $f(x)=\frac{1}{x}$?	Which statement is true about the x-intercept of $f(x)=\frac{1}{x}$?	Which statement is true about the y-intercept of $f(x)=\frac{1}{x}$?
$A)\ x=0$ $B)\ y=1$ $C)\ y=0$ $D)\ x=1$	$A)\ x=0$ $B)\ y=1$ $C)\ y=0$ $D)\ x=1$	$A)$ One x-intercept $B)$ Two x-intercepts $C)$ Infinitely many x-intercepts $D)$ None	$A)$ One y-intercept $B)$ Two y-intercepts $C)$ Infinitely many y-intercepts $D)$ None

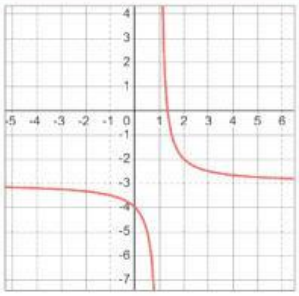
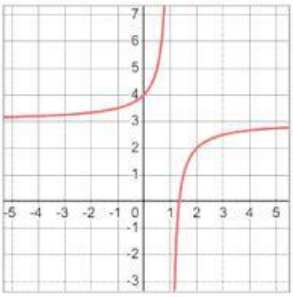
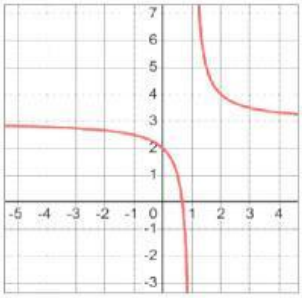
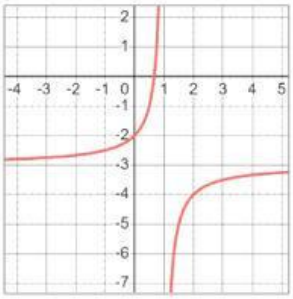
Q7

Determine the values of x for which $f(x)$ is undefined.

$f(x) = \frac{2}{-2x+5}$	$f(x) = \frac{-12}{-3x-7}$	$f(x) = \frac{5}{x}$	$f(x) = \frac{10}{x-3}$
$A)\ x = \frac{5}{2}$ $B)\ x = 3$ $C)\ x = 0$ $D)\ x = -\frac{7}{3}$	$A)\ x = \frac{5}{2}$ $B)\ x = 3$ $C)\ x = 0$ $D)\ x = -\frac{7}{3}$	$A)\ x = \frac{5}{2}$ $B)\ x = 3$ $C)\ x = 0$ $D)\ x = -\frac{7}{3}$	$A)\ x = \frac{5}{2}$ $B)\ x = 3$ $C)\ x = 0$ $D)\ x = -\frac{7}{3}$

Q8

Graph $g(x) = \frac{1}{x-1} + 3$.

Graph	Transformations	Domain and Range
$A)$  $B)$  $C)$  $D)$ 	$A)$ $h = -1$, translated left 1 unit $k = -3$, translated down 3 units $B)$ $h = 1$, translated left 1 unit $k = 3$, translated down 3 units $C)$ $h = 1$, translated right 1 unit $k = 3$, translated up 3 units $D)$ $h = 1$, translated right 1 unit $k = -3$, translated down 3 units	$A)$ Domain $\{x \mid x \neq 1\}$ Range $\{y \mid y \neq 3\}$ $B)$ Domain $\{x \mid x \neq -1\}$ Range $\{y \mid y \neq 3\}$ $C)$ Domain $\{x \mid x \neq -1\}$ Range $\{y \mid y \neq -3\}$ $D)$ Domain $\{x \mid x \neq 3\}$ Range $\{y \mid y \neq -1\}$
		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 $y = -1$

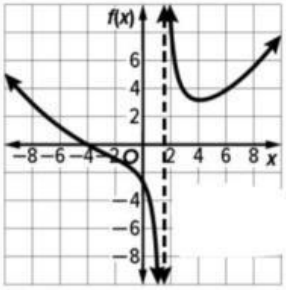
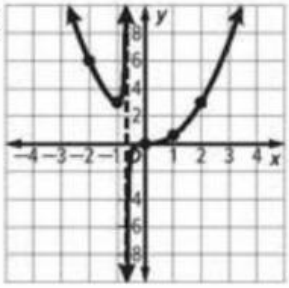
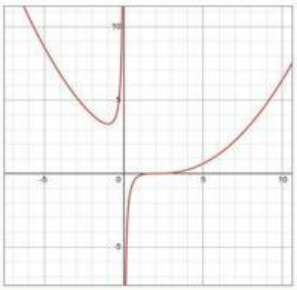
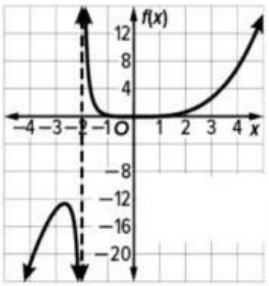
Q9

If the degree of the numerator equals the degree of the denominator, the horizontal asymptote is:	Find the horizontal asymptote of $f(x)=\frac{3x^2+1}{5x^2-2}$	Find the horizontal asymptote of $f(x)=\frac{2x+1}{x^3-4}$	Find the horizontal asymptote of $f(x)=\frac{x^4+2}{3x^2+1}$
$A)$ Ratio of leading coefficients $B)$ Product of leading coefficients $C)$ $y=0$ $D)$No asymptote	$A)$ $y=0$ $B)$ $y=\frac{5}{3}$ $C)$ $y=\frac{3}{5}$ $D)$ No horizontal asymptote	$A)$ $y=0$ $B)$ $y=\frac{5}{3}$ $C)$ $y=\frac{3}{5}$ $D)$ No horizontal asymptote	$A)$ $y=0$ $B)$ $y=\frac{5}{3}$ $C)$ $y=\frac{3}{5}$ $D)$ No horizontal asymptote

What is the vertical asymptote of $f(x)=\frac{1}{x-4}$	What is the vertical asymptote of $f(x)=\frac{x+1}{x^2-9}$	Which function has horizontal asymptote $y=1$	Which function has no horizontal asymptote?
$A)$ $y=4$ $B)$ $x=3$ $C)$ $x=\pm 3$ $D)$ $y=0$	$A)$ $y=4$ $B)$ $x=3$ $C)$ $x=\pm 3$ $D)$ $y=0$	$A)$ $\frac{x+1}{x+2}$ $B)$ $\frac{1}{x}$ $C)$ $\frac{x}{x^2+1}$ $D)$ $\frac{x^3}{x-1}$	$A)$ $\frac{2x+1}{x^2+3}$ $B)$ $\frac{x^3+1}{x+2}$ $C)$ $\frac{x^2}{x^2+1}$ $D)$ $\frac{5}{x}$

Q10

Graph $f(x) = \dfrac{x^3}{x + \frac{2}{3}}$

Graph	Find zeros	Find the asymptotes
$A)$  $B)$  $C)$  $D)$ 	$A)\ x = 3$ $B)\ x = \frac{2}{3}$ $C)\ x = -\frac{2}{3}$ $D)\ x = 0$	$A)$ V.A: $x = -\frac{2}{3}$ H.A: none $B)$ V.A: $x = -\frac{2}{3}$ H.A $y = 0$ $C)$ V.A: $x = \frac{2}{3}$ H.A: none $D)$ V.A: $x = 0$ H.A $y = 1$

Q11

What is another name for an oblique asymptote?	An oblique asymptote is:	A rational function has an oblique asymptote when:	Which function has an oblique asymptote?
A) Vertical asymptote B) Horizontal asymptote C) Slant asymptote D) Curved asymptote	A) Vertical B) Horizontal C) Neither horizontal nor vertical D) Parabola	A) Degree of numerator − degree of denominator = 1 B) Degree of denominator is greater C) Degree of denominator − degree of numerator = 1 D) Degree of numerator = degree of denominator	A) $\frac{x^2\_1}{x^2-4}$ B) $\frac{x^2+3x+1}{x+1}$ C) $\frac{x+2}{x^3+1}$ D) $\frac{5}{x-2}$

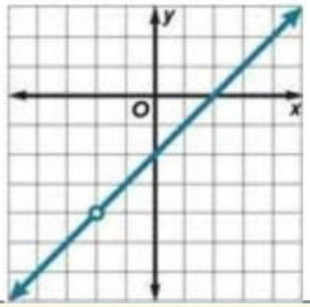
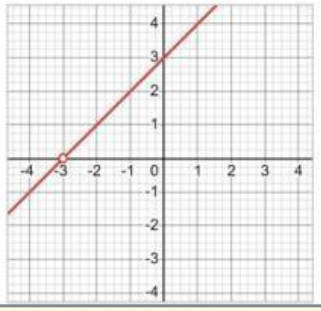
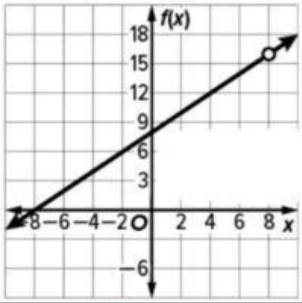
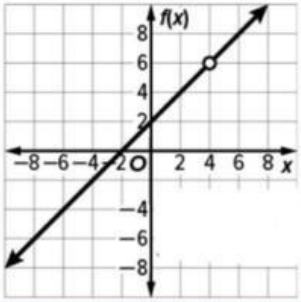
What method is used to find an oblique asymptote?	The equation of the oblique asymptote is:	Determine the type of asymptote for $f(x)=\frac{x^2+2}{x-2}$	If the degree of the numerator is 3 and the degree of the denominator is 2, the function has:
A) Long/ Synthetic division B) Graphing only C) Factoring D) Substitution	A) The remainder only B) The denominator C) The x-intercept D) The quotient without the remainder	A) Horizontal B) Oblique C) Vertical D) None	A) A vertical asymptote B) An oblique asymptote C) A horizontal asymptote D) No asymptote

Q12

Graph each function. Find the point discontinuity.

Key Concept • Point Discontinuity

If $f(x) = \frac{a(x)}{b(x)}$, $b(x) \neq 0$, and $x - c$ is a factor of both $a(x)$ and $b(x)$, then there is a point discontinuity at $x = c$.

$f(x) = \frac{x^2 - 4}{x + 2}$	$f(x) = \frac{(x + 3)^2}{x + 3}$	$f(x) = \frac{x^2 - 2x - 8}{x - 4}$	$f(x) = \frac{x^2 - 64}{x - 8}$
$A)\ x = -3$ $B)\ x = 4$ ☐ $C)\ x = -2$ $D)\ x = 8$	$A)\ x = -3$ $B)\ x = 4$ ☐ $C)\ x = -2$ $D)\ x = 8$	$A)\ x = -3$ $B)\ x = 4$ ☐ $C)\ x = -2$ $D)\ x = 8$	$A)\ x = -3$ $B)\ x = 4$ ☐ $C)\ x = -2$ $D)\ x = 8$
			

Q13

Solve each equation. Check your solutions.

$\frac{7}{12}+\frac{9}{x-4}=\frac{55}{48}$	$\frac{5}{6}-\frac{2}{4x+1}=\frac{x}{3}$	$\frac{14}{x-2}-\frac{18}{x+1}=\frac{22}{x^2-x-2}$	$\frac{2}{a+2}+\frac{10}{a+5}=\frac{36}{a^2+7a+10}$
$A)\ x=\frac{1}{2}$ and $\frac{7}{4}$ $B)\ x=20$ $C)\ x=7$ $D)\ x=\frac{1}{2}$	$A)\ x=\frac{1}{2}$ and $\frac{7}{4}$ $B)\ x=20$ $C)\ x=7$ $D)\ x=\frac{1}{2}$	$A)\ x=\frac{1}{2}$ and $\frac{7}{4}$ $B)\ x=20$ $C)\ x=7$ $D)\ x=\frac{1}{2}$	$A)\ x=\frac{1}{2}$ and $\frac{7}{4}$ $B)\ x=20$ $C)\ x=7$ $D)\ x=\frac{1}{2}$

Q14

Solve each equation. Check your solutions.

$\frac{2m}{m-4} - \frac{m^2+7m+4}{3m^2-18m+24} = \frac{4m}{3m-6}$	$\frac{3x}{x-4} - \frac{x^2-7x-4}{x^2-16} = \frac{5}{x+4}$	$\frac{x}{2x-1} + \frac{3}{x+4} = \frac{21}{2x^2+7x-4}$	$\frac{2}{y-5} + \frac{y-1}{2y+1} = \frac{2}{2y^2-9y-5}$
$A)\ x = 1$ $B)\ x = 4$ $C)\ x = -1$ $D)\ x = -1$ and 4	$A)\ x = -3$ $B)\ x = -4$ $C)\ x = -3$ and -4 $D)\ x = 3$	$A)\ x = -2$ $B)\ x = -12$ and -2 $C)\ x = -12$ $D)\ x = 2$	$A)\ x = -5$ $B)\ x = 5$ $C)\ x = 2$ $D)\ \emptyset$