

الصف الثاني عشر عام
Grade 12 General

EOT-Q1--15-

جزء-1-

2025-2026

K-RACHID

LIVEWORKSHEETS

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) $\frac{x(x+2y)}{x+y}$	A) $-\frac{5x-1}{x^2(5x+1)}$	A) $-\frac{x^2}{x+6}$	A) $\frac{c-4}{c+5}$
B) $-\frac{x(x+2y)}{x+y}$	B) $\frac{(7y-3x)(5x-1)}{x^2(5x+1)(3x-7y)}$	B) $\frac{x^2}{x+3}$	B) $-\frac{c+4}{c-2}$
C) $\frac{x(x+y)}{x+y}$	C) $\frac{1}{x^2}$	C) $\frac{x^2}{x+6}$	C) $\frac{c-4}{c+2}$
D) $\frac{-x(x+2y)}{x-y}$	D) $\frac{5x-1}{5x^3+x^2}$	D) $-\frac{x^2}{x-3}$	D) $-\frac{c+4}{c+5}$
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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) $\frac{y^3}{2x^2}$ B) $\frac{x^2}{8y^3}$ C) $\frac{x}{72y^3}$ D) $\frac{x^2}{2y^3}$	A) $\frac{d}{9c^3}$ B) $\frac{2d^2}{9c^3}$ C) $\frac{d^2}{9c^3}$ D) $\frac{2d}{9c^2}$	A) $\frac{z^2}{18w^3}$ B) $\frac{7z}{18w^5}$ C) $\frac{7z^2}{18w^5}$ D) $\frac{7z}{18w^2}$	A) $\frac{32b}{3ac^3f^2}$ B) $\frac{32b}{ac^3f^2}$ C) $\frac{32ba^{-1}}{3cf}$ D) $\frac{32b}{3ac^3f^3}$
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Q₃

Simplify each expression.

$\frac{\frac{3x}{x-y}}{\frac{6xy}{4x^2-4y^2}}$	$\frac{\frac{x^2-9y^2}{xy}}{\frac{2x+6y}{x^2}}$	$\frac{\frac{y-x}{z^3}}{\frac{x-y}{6z^2}}$	$\frac{\frac{a^2-b^2}{b^3}}{\frac{b^2-ab}{a^2}}$
<p>A) $\frac{(x+y)}{y}$</p> <p>B) $\frac{(x-y)}{y}$</p> <p>C) $\frac{2(x-y)}{y}$</p> <p>D) $\frac{2(x+y)}{y}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $\frac{x(x-y)}{y}$</p> <p>B) $\frac{x(x+3y)}{2y}$</p> <p>C) $\frac{x(x-3y)}{2y}$</p> <p>D) $\frac{x(x-y)}{2y}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $-\frac{6}{z}$</p> <p>B) $\frac{6}{z}$</p> <p>C) $\frac{3}{z}$</p> <p>D) $-\frac{3}{z}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $\frac{a^2(a+b)}{b^4}$</p> <p>B) $\frac{a(a+b)}{b^3}$</p> <p>C) $\frac{a+b}{b^3}$</p> <p>D) $\frac{a-b}{b^4}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>

Q4

Simplify each expression.

$$\frac{7a}{4b} + \frac{4c^2}{10}$$

A) $\frac{a+8bc^2}{22b}$

B) $\frac{35a+8bc}{20b^2}$

C) $\frac{35a+8bc^2}{20b}$

D) $\frac{35a-8c^2}{20b}$

$$\frac{2x}{9y} - \frac{7y}{6z}$$

A) $\frac{2xz-21y^2}{18yz}$

B) $\frac{4xz-21y^2}{18yz}$

C) $\frac{2xz+21y^2}{18y^2z}$

D) $\frac{4xz-y^2}{18y^2z}$

$$\frac{3}{x} + \frac{5}{y}$$

A) $\frac{5x-3y}{xy}$

B) $\frac{5x+3y}{xy}$

C) $\frac{5x-3y}{x^2y}$

D) $\frac{5x+3y}{xy^2}$

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

A) $\frac{13}{8p^2r}$

B) $\frac{12}{8p^2r}$

C) $\frac{12}{8pr}$

D) $\frac{13}{8p^2r^2}$

Q5

Simplify each expression.

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

Q6

<p>What is the parent reciprocal function?</p> <p>A) x^2 B) $\frac{1}{x}$ C) x D) \sqrt{x}</p> <p><input type="text"/></p>	<p>What type of graph does $f(x) = \frac{1}{x}$ produce?</p> <p>A) Parabola B) Circle C) Hyperbola D) Line</p> <p><input type="text"/></p>	<p>Which value is NOT in the domain of $f(x) = \frac{1}{x}$?</p> <p>A) 3 B) $\frac{1}{3}$ C) 2 D) 0</p> <p><input type="text"/></p>	<p>Which value is NOT in the range of $f(x) = \frac{1}{x}$?</p> <p>A) 3 B) $\frac{1}{3}$ C) 2 D) 0</p> <p><input type="text"/></p>
<p>What is the vertical asymptote of $f(x) = \frac{1}{x}$?</p> <p>A) $x = 0$ B) $y = 1$ C) $y = 0$ D) $x = 1$</p> <p><input type="text"/></p>	<p>What is the horizontal asymptote of $f(x) = \frac{1}{x}$?</p> <p>A) $x = 0$ B) $y = 1$ C) $y = 0$ D) $x = 1$</p> <p><input type="text"/></p>	<p>Which statement is true about the x-intercept of $f(x) = \frac{1}{x}$?</p> <p>A) One x-intercept B) Two x-intercepts C) Infinitely many x-intercepts D) None</p> <p><input type="text"/></p>	<p>Which statement is true about the y-intercept of $f(x) = \frac{1}{x}$?</p> <p>A) One y-intercept B) Two y-intercepts C) Infinitely many y-intercepts D) None</p> <p><input type="text"/></p>

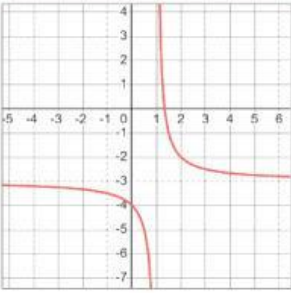
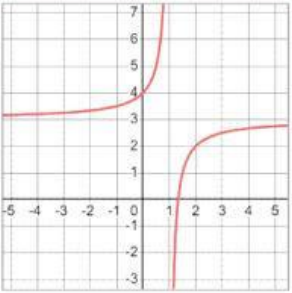
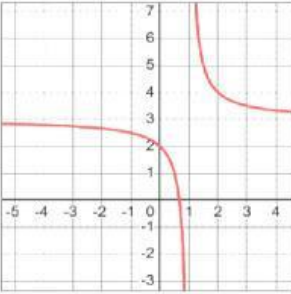
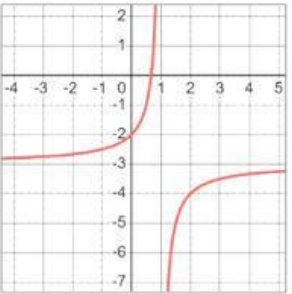
Q7

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) $x = -\frac{7}{3}$
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Q8

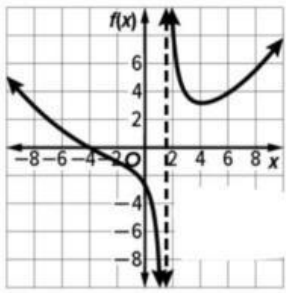
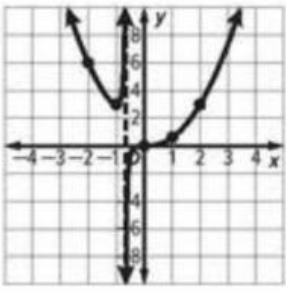
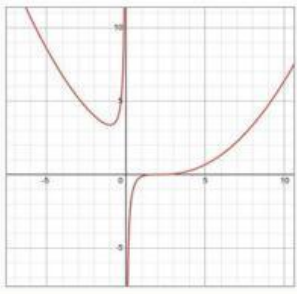
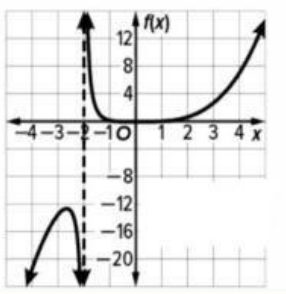
Graph $g(x) = \frac{1}{x-1} + 3$.

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

<p>If the degree of the numerator equals the degree of the denominator, the horizontal asymptote is:</p> <p>A) Ratio of leading coefficients</p> <p>B) Product of leading coefficients</p> <p>C) $y = 0$ <input type="text"/></p> <p>D) No asymptote</p>	<p>Find the horizontal asymptote of $f(x) = \frac{3x^2+1}{5x^2-2}$</p> <p>A) $y = 0$</p> <p>B) $y = \frac{5}{3}$ <input type="text"/></p> <p>C) $y = \frac{3}{5}$</p> <p>D) No horizontal asymptote</p>	<p>Find the horizontal asymptote of $f(x) = \frac{2x+1}{x^3-4}$</p> <p>A) $y = 0$</p> <p>B) $y = \frac{5}{3}$ <input type="text"/></p> <p>C) $y = \frac{3}{5}$</p> <p>D) No horizontal asymptote</p>	<p>Find the horizontal asymptote of $f(x) = \frac{x^4+2}{3x^2+1}$</p> <p>A) $y = 0$</p> <p>B) $y = \frac{5}{3}$ <input type="text"/></p> <p>C) $y = \frac{3}{5}$</p> <p>D) No horizontal asymptote</p>
<p>What is the vertical asymptote of $f(x) = \frac{1}{x-4}$</p> <p>A) $y = 4$</p> <p>B) $x = 3$</p> <p>C) $x = \pm 3$</p> <p>D) $y = 0$ <input type="text"/></p>	<p>What is the vertical asymptote of $f(x) = \frac{x+1}{x^2-9}$</p> <p>A) $y = 4$</p> <p>B) $x = 3$</p> <p>C) $x = \pm 3$</p> <p>D) $y = 0$ <input type="text"/></p>	<p>Which function has horizontal asymptote $y = 1$</p> <p>A) $\frac{x+1}{x+2}$</p> <p>B) $\frac{1}{x}$</p> <p>C) $\frac{x}{x^2+1}$</p> <p>D) $\frac{x^3}{x-1}$ <input type="text"/></p>	<p>Which function has no horizontal asymptote?</p> <p>A) $\frac{2x+1}{x^2+3}$</p> <p>B) $\frac{x^3+1}{x+2}$</p> <p>C) $\frac{x^2}{x^2+1}$</p> <p>D) $\frac{5}{x}$ <input type="text"/></p>

Q10
Graph $f(x) = \frac{x^3}{x + \frac{2}{3}}$

Graph		Find zeros	Find the asymptotes
<p>A) </p>	<p>B) </p>	<p>A) $x = 3$ B) $x = \frac{2}{3}$ C) $x = -\frac{2}{3}$ D) $x = 0$</p>	<p>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 $y = 1$</p>
<p>C) </p>	<p>D) </p>	<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div>

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 <input type="text"/>	A) Vertical B) Horizontal C) Neither horizontal nor vertical D) Parabola <input type="text"/>	A) Degree of numerator - degree of denominator = 1 B) Degree of denominator is greater <input type="text"/> 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) $\frac{5}{x-2}$ <input type="text"/>

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 <input type="text"/>	A) The remainder only B) The denominator C) The x-intercept D) The quotient without the remainder <input type="text"/>	A) Horizontal B) Oblique C) Vertical D) None <input type="text"/>	A) A vertical asymptote B) An oblique asymptote C) A horizontal asymptote D) No asymptote <input type="text"/>

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) $x = 4$ <input type="text"/> C) $x = -2$ D) $x = 8$	A) $x = -3$ B) $x = 4$ <input type="text"/> C) $x = -2$ D) $x = 8$	A) $x = -3$ B) $x = 4$ <input type="text"/> C) $x = -2$ D) $x = 8$	A) $x = -3$ B) $x = 4$ <input type="text"/> C) $x = -2$ D) $x = 8$

Q13

Solve each equation. Check your solutions.

$\frac{7}{12} + \frac{9}{x-4} = \frac{55}{48}$	$\frac{5}{6} - \frac{2}{4x+1} = \frac{x}{3}$	$\frac{14}{x-2} - \frac{18}{x+1} = \frac{22}{x^2-x-2}$	$\frac{2}{a+2} + \frac{10}{a+5} = \frac{36}{a^2+7a+10}$
<p>A) $x = \frac{1}{2}$ and $\frac{7}{4}$</p> <p>B) $x = 20$</p> <p>C) $x = 7$</p> <p>D) $x = \frac{1}{2}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $x = \frac{1}{2}$ and $\frac{7}{4}$</p> <p>B) $x = 20$</p> <p>C) $x = 7$</p> <p>D) $x = \frac{1}{2}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $x = \frac{1}{2}$ and $\frac{7}{4}$</p> <p>B) $x = 20$</p> <p>C) $x = 7$</p> <p>D) $x = \frac{1}{2}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>	<p>A) $x = \frac{1}{2}$ and $\frac{7}{4}$</p> <p>B) $x = 20$</p> <p>C) $x = 7$</p> <p>D) $x = \frac{1}{2}$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 10px auto;"></div>

Q14

Solve each equation. Check your solutions.

$\frac{2m}{m-4} - \frac{m^2+7m+4}{3m^2-18m+24} = \frac{4m}{3m-6}$	$\frac{3x}{x-4} - \frac{x^2-7x-4}{x^2-16} = \frac{5}{x+4}$	$\frac{x}{2x-1} + \frac{3}{x+4} = \frac{21}{2x^2+7x-4}$	$\frac{2}{y-5} + \frac{y-1}{2y+1} = \frac{2}{2y^2-9y-5}$
<p>A) $x = 1$ B) $x = 4$ C) $x = -1$ D) $x = -1$ and 4</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 20px auto;"></div>	<p>A) $x = -3$ B) $x = -4$ C) $x = -3$ and -4 D) $x = 3$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 20px auto;"></div>	<p>A) $x = -2$ B) $x = -12$ and -2 C) $x = -12$ D) $x = 2$</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 20px auto;"></div>	<p>A) $x = -5$ B) $x = 5$ C) $x = 2$ D) \emptyset</p> <div style="border: 1px solid black; width: 100px; height: 25px; margin: 20px auto;"></div>