PING YI SECONDARY SCHOOL

Perseverance Yields Success

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4e. $\frac{5}{2x-1} - \frac{10}{6x-3}$

$= \frac{5}{2x-1} \times \frac{3}{3} - \frac{10}{3(2x-1)}$

$= \frac{15-10}{3(2x-1)}$

$= \frac{5}{3(2x-1)}$

	$(2x-1)$	$3(2x-1)$
3	1	3
	1	1

$\therefore$ LCM $= 3(2x-1)$

4f. $\frac{2b}{b+2} + \frac{b}{2b+4}$

$= \frac{2b}{b+2} \times \frac{2}{2} + \frac{b}{2(b+2)}$

$= \frac{4b+b}{2(b+2)}$

$= \frac{5b}{2(b+2)}$

	$(b+2)$	$2(b+2)$
2	1	2
	1	1

$\therefore$ LCM $= 2(b+2)$

4g. $\frac{3}{x-4} + \frac{1}{x^2-16}$

$= \frac{3}{x-4} + \frac{1}{x^2-4^2}$

$= \frac{3}{x-4} + \frac{1}{(x+4)(x-4)}$

$= \frac{3(x+4)+1}{(x+4)(x-4)}$

$= \frac{3x+12+1}{(x+4)(x-4)}$

$= \frac{3x+13}{(x+4)(x-4)}$

a^2-b^2

$= (a+b)(a-b)$

	$x-4$	$(x+4)(x-4)$
$x+4$	1	$(x+4)$
	1	1

$\therefore$ LCM $= (x-4)(x+4)$

4h. $\frac{3}{x-2} - \frac{2}{x^2-4x+4}$

$= \frac{3}{x-2} - \frac{2}{(x-2)(x-2)}$

$= \frac{3(x-2)-2}{(x-2)(x-2)}$

$= \frac{3x-6-2}{(x-2)(x-2)}$

$= \frac{3x-8}{(x-2)(x-2)}$

	x	-2	$-2x$
x			
-2			$-2x$
	x^2	4	$-4x$

	$x-2$	$(x-2)(x-2)$
$x-2$	1	$(x-2)$
	1	1

4i. $\frac{2}{a+3} + \frac{1}{a-3}$

$= \frac{2(a-3)+1(a+3)}{(a+3)(a-3)}$

$= \frac{2a-6+a+3}{(a+3)(a-3)}$

$= \frac{3a-3}{(a+3)(a-3)}$

	$a+3$	$a-3$
$a-3$	1	$a-3$
	1	1

4j. $\frac{x-1}{x^2-9} + \frac{7}{3x+9}$

$= \frac{x-1}{x^2-3^2} + \frac{7}{3(x+3)}$

$= \frac{3(x-1)+7(x-3)}{3(x+3)(x-3)}$

$= \frac{3x-3+7x-21}{3(x+3)(x-3)}$

	$(x-3)(x+3)$	$3(x+3)$
$x-3$	$(x-3)$	3
3	1	3

FALCON

$= \frac{3x+7x-3-21}{3(x+3)(x-3)}$

$= \frac{10x-24}{3(x+3)(x-3)}$

5. Speed $= \frac{\text{distance}}{\text{time}}$

$\text{time} = \frac{\text{distance}}{\text{speed}}$

Mr Lee's time + Mr Kang's time = total time

$\frac{4}{(x+2)} + \frac{4}{(x-1)}$ (multiply by $(x-1)(x+2)$)

$= \frac{4(x-1)+4(x+2)}{(x+2)(x-1)}$

$= \frac{4x-4+4x+8}{(x+2)(x-1)}$

$= \frac{8x+4}{(x+2)(x-2)}$

6a. $B = \frac{1}{x+4+2}$

$= \frac{1}{x+6}$.

6b. $A - B$

$\frac{1}{x+4} - \frac{1}{x+6}$ (multiply by $(x+4)(x+6)$)

$= \frac{x+6-(x+4)}{(x+4)(x+6)}$

$= \frac{x+6-x-4}{(x+4)(x+6)}$

$= \frac{2}{(x+4)(x+6)}$ #

7. $(p+q)$ bowls of 24

1 bowl $\rightarrow \frac{24}{(p+q)}$

$(3p+3q)$ plate $\rightarrow \$36$

1 plate $\rightarrow \frac{36}{(3p+3q)}$

1 bowl + 1 plate

$= \frac{24}{(p+q)} + \frac{36}{(3p+3q)}$

$= \frac{24}{p+q} + \frac{36}{3(p+q)}$ (multiply by 3)

$= \frac{72+36}{3(p+q)}$

$= \frac{108}{3(p+q)}$.