Solving Using Balance Strategies

example 1

$6x + 2 = 10 + 4x$

$-4x \quad -4x$

$2x + 2 = 10$

$-2 \quad -2$

$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

LS	RS
$6x+2$	$10+4x$
$6(4)+2$	$10+4(4)$
$24+2$	$10+16$
26	26

LS=RS ∴ x=4

Try this...

$-3c + 7 = 2c - 8$

$-2c \quad -2c$

$-5c + 7 = -8$

$-7 \quad -7$

$\frac{-5c}{-5} = \frac{-15}{-5}$

$c = 3$

LS	RS
$-3c+7$	$2c-8$
$-3(3)+7$	$2(3)-8$
$-9+7$	$6-8$
-2	-2

LS=RS ∴ c=3

example 2

$$\frac{122}{r} = 3,\ r \neq 0$$

$(r)\ \frac{122}{r} = 3(r)$

$\frac{122}{3} = \frac{3r}{3}$

$40.\bar{6} = r$

example 3

$$\frac{2a}{3} = \frac{4a}{5} + 7$$

$15\left(\frac{2a}{3}\right) = 15\left(\frac{4a}{5}\right) + 15(7)$

$10a = 12a + 105$ (−12a, −12a)

$\frac{-2a}{-2} = \frac{105}{-2}$

$a = -52.5$

LS	RS
$\frac{2a}{3}$	$\frac{4a}{5} + 7$
$\frac{2(-52.5)}{3}$	$\frac{4(-52.5)}{5} + 7$
$\frac{-105}{3}$	$\frac{-210}{5} + 7$
-35	$-42 + 7$
	-35

$LS = RS \therefore a = -52.5$

Try this...

$$\frac{x}{2} + \frac{x}{4} = 6$$

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

$2x + x = 24$

$\frac{3x}{3} = \frac{24}{3}$

$x = 8$

LS	RS
$\frac{x}{2} + \frac{x}{4}$	6
$\frac{8}{2} + \frac{8}{4}$	
$4 + 2$	
6	

LS=RS ∴ x=8

Finish...

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9, 10 a,d,f, 11,13-17,18 a,c,e

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19-22, 24 a,b,c