M = Margin

Col = 1-column only

2 = 1-sided only

C = Lacking Context

#10

#21 John John

GRIND > TALENT

(19) $7+3x = 4(x-1)$

$3x+7 = 4x-4$ 2 pts

$-4x-7 = -4x-7$

$-x = -11$ 3 pts

$\frac{-x}{-1} = \frac{-11}{-1}$

$x = 11$ 5 pts

$7+3(11) \stackrel{?}{=} 4(11-1)$

$7+33 = 4(10)$

$40 = 40$ ✓

(23) $\frac{x}{2} - 5 = -12 - \frac{2x}{3}$

$\frac{x}{2} = -7 - \frac{2x}{3}$

$\frac{x}{2}\cdot\frac{3}{3} = -\frac{7}{1}\cdot\frac{6}{6} - \frac{2x}{3}\cdot\frac{2}{2}$

$\frac{3x}{6} = \frac{-42-4x}{6}$ 3 pts

$3x = -42-4x$

$+4x \quad = \quad +4x$

$7x = -42$ 2 pts

$x = \frac{-42}{7}$

$-6 = x$ 2 pts

LCD = 2·3 = 6 3 pts

$-\frac{6}{2} - 5 \stackrel{?}{=} -12 - \frac{2(-6)}{3}$

$-3-5 = -12+4$

$-8 = -8$ ✓

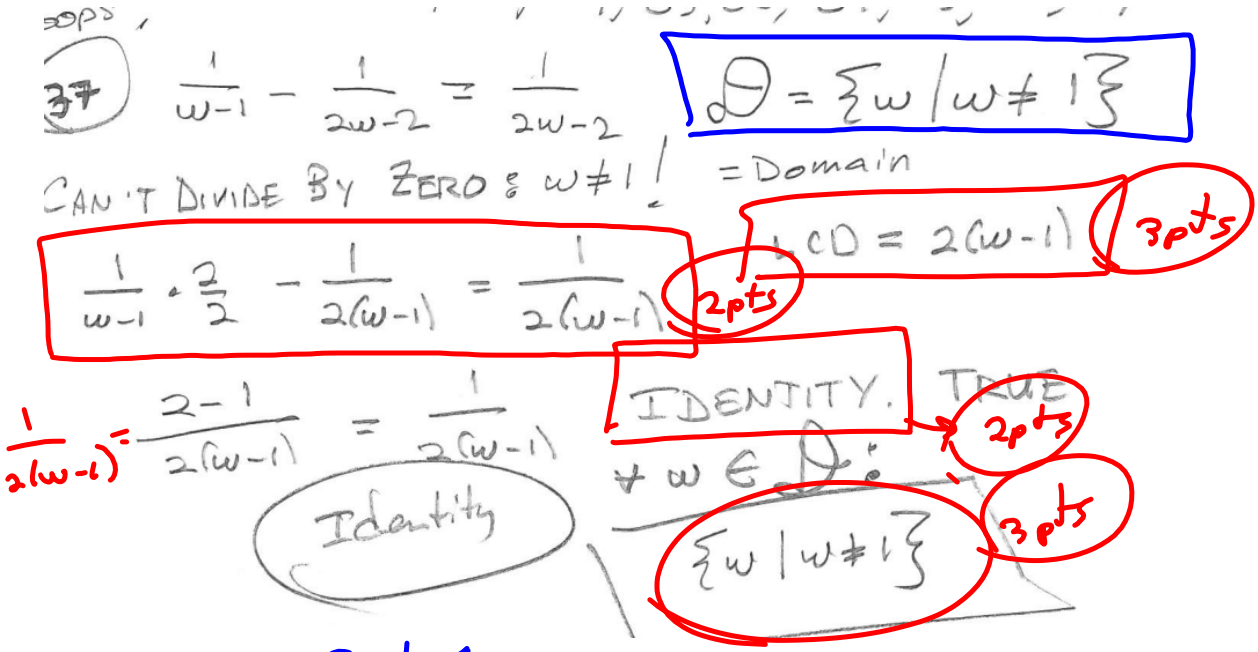
LCD = 6

$\frac{x}{2} - 5 = -12 - \frac{2x}{3}$

$\left(\frac{x}{2} = -7 - \frac{2x}{3}\right)(6)$

$\frac{3}{6}\left(\frac{x}{2}\right) = -7(6) - \frac{2x}{3}\cdot\frac{6}{1}$

$3x = -42 - 4x$

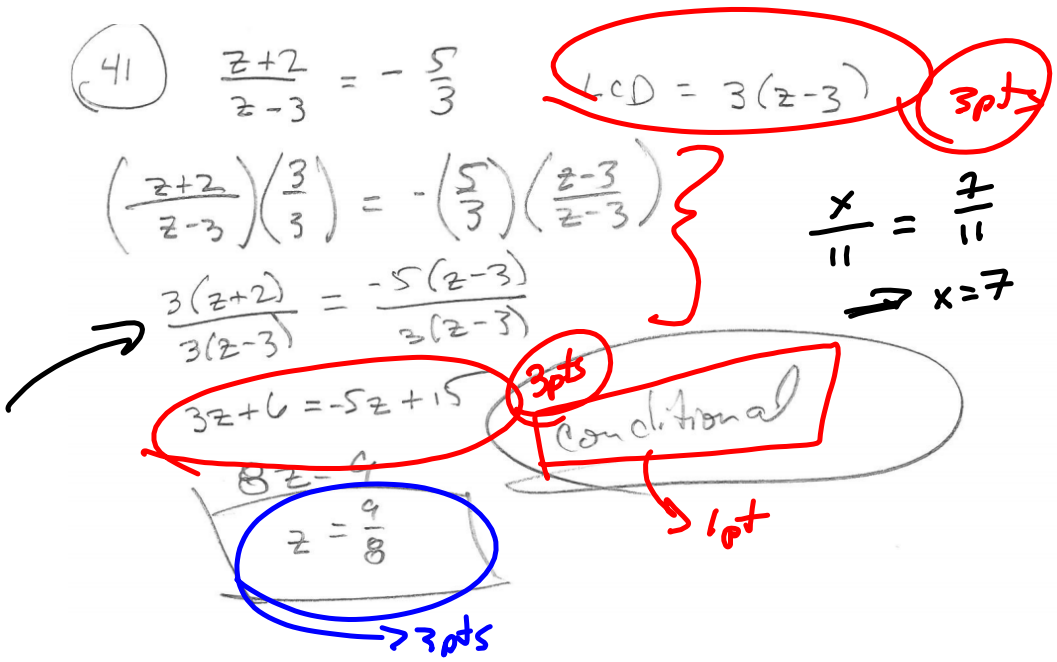


Domain, Part 1.

$\frac{\text{STUFF}}{0}$ is bad. Otherwise $\mathcal{D} = \mathbb{R} = (-\infty, \infty)$

$\frac{m}{w-1}$ Need $w-1 \neq 0$

$\Rightarrow w \neq 1$


41
$\frac{z+2}{z-3} = -\frac{5}{3}$
LCD = 3(z-3)
3pts
$\left(\frac{z+2}{z-3}\right)\left(\frac{3}{3}\right) = -\left(\frac{5}{3}\right)\left(\frac{z-3}{z-3}\right)$
$\frac{3(z+2)}{3(z-3)} = \frac{-5(z-3)}{3(z-3)}$
$3z+6 = -5z+15$
3pts
conditional
1pt
$8z = 9$
$z = \frac{9}{8}$
3pts
$\frac{x}{11} = \frac{7}{11}$
$x = 7$

(45) $4 + \frac{6}{y-3} = \frac{2y}{y-3}$

LCD $= y-3$ — 3 pts

$\left(\frac{4}{1}\right)\left(\frac{y-3}{y-3}\right) + \frac{6}{y-3} = \frac{2y}{y-3}$

$\mathcal{D} = \{y \mid y \neq 3\}$ — 2 pts

$\frac{4y-12+6}{y-3} = \frac{2y}{y-3}$

$\frac{4y-6}{y-3} = \frac{2y}{y-3}$ — 3 pts

$4y - 6 = 2y$

$2y = 6$

$y = 3$ — 1 pt

No Solution! Inconsistent! — 1 pt

$y = 3 \notin \mathcal{D}$ (Problem).

$2 \mid 43560$

21780

$2 \mid 43560$

$2 \mid 21780$

$2 \mid 10890$

$3 \mid 5445$

$3 \mid 1815$

$5 \mid 605$

$11 \mid 121$

11

$5+4+5+4 = 18$

$1+8 = 9$

$\frac{121}{7}$ Nemp

$\frac{121}{11} = 11$

$\sqrt{43560} = \sqrt{2^3 \cdot 3^2 \cdot 5 \cdot 11^2} = \sqrt{2^2 \cdot 3^2 \cdot 11^2 \cdot 5 \cdot 2}$

$= 2^{\frac{2}{2}} \cdot 3^{\frac{2}{2}} \cdot 11^{\frac{2}{2}} \sqrt{5 \cdot 2}$

$= 66\sqrt{10}$ Simplified.

#s63–80 Solve each absolute-value equation.

(65) $|x-4| = 8$ If you do it my way, you'll be better off in S Lot.

$x-4 = 8$ OR $x-4 = -8$

$x = 12$ OR $x = -4$

$x \in \{-4, 12\}$

Pretty!

$x - 4 = \pm 8$

$+4 = +4$

$x = 4 \pm 8$ → 12, −4

$x \in \{-4, 12\}$.

$|x-4| > 8$

$\Rightarrow x-4 > 8$ (OR) $x-4 < -8$

$|x-4| < 8$

$\Rightarrow x-4 < 8$ (AND) $x-4 > -8$

Book says

$-8 < x-4 < 8$ which is fine, BUT

$|x-4| > 8$

$-8 > x-4 > 8$ is a LIE!