Routine Linear Solving Practice #3

- 1 + 2x = 21. 2. 6x - 9 = -411x - 4 = 113. 5 - 9x = 74. 8x - 7 = 25. 12x + 9 = -126. 10x + 3 = 57. 8. 12 + 8x = -108x + 7 = -49. 3 + 2x = 1110. 11. 3(x-3) = -1112. 11x + 5 = 2x - 122(1-6x) = 1113. 14 + 10x = 3x14. $^{-1} = ^{-2} - 7x$ 15.
- 16. 8x + 13 = 0
- 17. 12x + 1 = 5x 12
- 18. 11 6x = 6 5x
- 19. 6x + 6 = 2x 3
- 20. 2 + 5x = -5 3x

Answers: Routine Linear Solving Practice #3

The middle steps shown are to help locate errors. Students should show more working than this.

1.	1 + 2x = 2	2x = 2 - 1	$x = 1 \div 2$	<i>x</i> = 0.5	= ¹ / ₂
2.	6x - 9 = -4	6x = -4 + 9	$x = 5 \div 6$	<i>x</i> = 0.833	= ⁵ / ₆
3.	11x - 4 = 11	11x = 11 + 4	<i>x</i> = 15 ÷ 11	<i>x</i> = 1.364	= ¹⁵ / ₁₁
4.	5 - 9x = 7	-9x = 7 - 5	$x = 2 \div -9$	<i>x</i> = ⁻ 0.222	= ⁻² / ₉
5.	8x - 7 = 2	8x = 2 + 7	$x = 9 \div 8$	<i>x</i> = 1.125	= 9/8
6.	12x + 9 = -12	12x = -12 - 9	$x = -21 \div 12$	<i>x</i> = ⁻ 1.75	= -7/4
7.	10x + 3 = 5	10x = 5 - 3	$x = 2 \div 10$	<i>x</i> = 0.2	= ¹ / ₅
8.	12 + 8x = -10	8x = -10 - 12	$x = -22 \div 8$	x = -2.75	= -11/4
9.	8x + 7 = -4	8x = -4 - 7	$x = -11 \div 8$	<i>x</i> = ⁻ 1.375	= -11/8
10.	3 + 2x = 11	2x = 11 - 3	$x = 8 \div 2$	<i>x</i> = 4	
11.	3(x-3) = -11	3x - 9 = -11	3x = -11 + 9	<i>x</i> = ⁻ 0.667	= ⁻² / ₃
11. 12.	3(x - 3) = -11 11x + 5 = 2x - 12			x = ⁻ 0.667 x = ⁻ 1.889	$= \frac{-2}{3}$ $= \frac{-17}{9}$
		11x - 2x + 5 = -12			
12.	11x + 5 = 2x - 12 $2(1 - 6x) = 11$	11x - 2x + 5 = -12 2 - 12x = 11	9x = -12 - 5	<i>x</i> = ⁻ 1.889	= -17/9
12. 13. 14.	11x + 5 = 2x - 12 $2(1 - 6x) = 11$ $14 + 10x = 3x$	11x - 2x + 5 = -12 2 - 12x = 11 14 = 3x - 10x	9x = -12 - 5 -12x = 9	x = -1.889 x = -0.75 x = -2	$= \frac{-17}{9}$ $= \frac{-3}{4}$ $= \frac{-2}{1}$
12. 13. 14.	11x + 5 = 2x - 12 2(1 - 6x) = 11 14 + 10x = 3x -1 = -2 - 7x	11x - 2x + 5 = -12 2 - 12x = 11 14 = 3x - 10x	9x = -12 - 5 -12x = 9 $14 \div -7 = x$ $1 \div -7 = x$	x = -1.889 x = -0.75 x = -2	$= \frac{-17}{9}$ = $\frac{-3}{4}$ = $\frac{-2}{7}$ = $\frac{-1}{7}$
12. 13. 14. 15.	11x + 5 = 2x - 12 2(1 - 6x) = 11 14 + 10x = 3x -1 = -2 - 7x 8x + 13 = 0	11x - 2x + 5 = -12 2 - 12x = 11 14 = 3x - 10x -1 + 2 = -7x	9x = -12 - 5 -12x = 9 $14 \div -7 = x$ $1 \div -7 = x$ 8x = -13	x = -1.889 x = -0.75 x = -2 x = -0.143	$= \frac{-17}{9}$ = $\frac{-3}{4}$ = $\frac{-2}{2}$ = $\frac{-1}{7}$ = $\frac{-13}{8}$
12. 13. 14. 15. 16.	11x + 5 = 2x - 12 2(1 - 6x) = 11 14 + 10x = 3x -1 = -2 - 7x 8x + 13 = 0 12x + 1 = 5x - 12	11x - 2x + 5 = -12 2 - 12x = 11 14 = 3x - 10x -1 + 2 = -7x 8x = 0 - 13	9x = -12 - 5 -12x = 9 $14 \div -7 = x$ $1 \div -7 = x$ 8x = -13 7x + 1 = -12	x = -1.889 x = -0.75 x = -2 x = -0.143 x = -1.625	$= \frac{-17}{9}$ = $\frac{-3}{4}$ = $\frac{-2}{7}$ = $\frac{-1}{7}$ = $\frac{-13}{8}$
12. 13. 14. 15. 16. 17.	11x + 5 = 2x - 12 2(1 - 6x) = 11 14 + 10x = 3x -1 = -2 - 7x 8x + 13 = 0 12x + 1 = 5x - 12 11 - 6x = 6 - 5x	11x - 2x + 5 = -12 2 - 12x = 11 14 = 3x - 10x -1 + 2 = -7x 8x = 0 - 13 12x - 5x + 1 = -12 11 - 6x + 5x = 6	9x = -12 - 5 -12x = 9 $14 \div -7 = x$ $1 \div -7 = x$ 8x = -13 7x + 1 = -12	x = -1.889 x = -0.75 x = -2 x = -0.143 x = -1.625 x = -1.857 x = 5	$= \frac{-17}{9}$ = $\frac{-3}{4}$ = $\frac{-2}{7}$ = $\frac{-1}{7}$ = $\frac{-13}{8}$ = $\frac{-3}{7}$

It is preferable to leave answers in improper fraction form, provided it is simplified and any negative sign is on the numerator. Decimal form is **not** better.