Algebra I Ch 1 Test Review

1. $-4x+15$; $x=-9$

$-4(-9)+15$

$36+15$

51

2. $\left|\frac{1}{3}x-21\right|$; $x=12$

$\left|\frac{1}{3}(12)-21\right| = |4-21|$

$= |-17| = 17$

3. $-3+\sqrt{x+11}$; $x=14$

$-3+\sqrt{14+11}$

$-3+\sqrt{25} = -3+5 = 2$

4. $4\left(\frac{3}{4}\right)+1(-2)$

$3-16$

-13

5. $\sqrt{-2(-2)} - \frac{2}{8}\left(\frac{3}{4}\right)$

$\sqrt{4} - \frac{1}{2}$

$2-\frac{1}{2}$

$\frac{3}{2}$

6. $\frac{2}{4}\left(\frac{3}{4}\right)+|3(-2)|$

$\frac{3}{2}+|-6| = \frac{3}{2}+6$

$= \frac{15}{2}$

7. $-14 = p-11$

$+11 \quad +11$

$p=-3$

8. $\frac{-5x}{-5} = \frac{18}{-5}$

$x = -\frac{18}{5}$

9. $-16 = r-9$

$+9 \quad +9$

$r=-7$

10. $\frac{y}{4} = -3 \cdot 4$

$y=-12$

11. $\frac{0}{12} = \frac{12x}{12}$

$x=0$

12. $m+13 = 32$

$-13 \quad -13$

$m=19$

13. $-4+h=17$

$+4 \quad +4$

$h=21$

14. $\frac{w}{7} \cdot 7 = -5 \cdot 7$

$w=35$

15. $10 = 7-m$

$-7 \quad -7$

$\frac{3}{-1} = \frac{-m}{-1}$

$m=-3$

16. $5 = \frac{z}{-4} - 3$

$+7 \quad +3$

$-4 \cdot 8 = \frac{z}{-4} \cdot -4$

$z=-32$

17. $\frac{9}{3} + 4 = 6$

$-4 \quad -4$

$3 \cdot \frac{9}{3} = 2 \cdot 3$

$9=6$

18. $36 = 13n - 4n$

$\frac{36}{9} = \frac{9n}{9}$

$n=4$

19. $6c - 8 - 2c = -16$

$4c - 8 = -16$

$+8 \quad +8$

$\frac{4c}{4} = \frac{-8}{4}$

$c = -2$

20. $12v + 10v + 14 = 80$

$22v + 14 = 80$

$-14 \quad -14$

$\frac{22v}{22} = \frac{66}{22}$

$v = 3$

21. $\frac{4 \cdot (z+5)}{4} = \frac{32}{4}$

$z + 5 = 8$

$-5 \quad -5$

$z = 3$

22. $2(x+3) + x = -9$

$2x + 6 + x = -9$

$3x + 6 = -9$

$-6 \quad -6$

$\frac{3x}{3} = \frac{-15}{3}$

$x = -5$

23. $2x + 13 = 75$

$-13 \quad -13$

$\frac{2x}{2} = \frac{62}{2}$

$x = 31$

24. $2x + 10 = 42$

$-10 \quad -10$

$\frac{2x}{2} = \frac{32}{2}$

$x = 16$

25. $\frac{4(x-7)}{4} = \frac{12}{4}$

$x - 7 = 3$

$+7 \quad +7$

$x = 10$

26. $8 + \frac{x}{3} = -2$

$-8 \qquad -8$

$3 \cdot \frac{x}{3} = -10 \cdot 3$

$x = -30$

27. $5t + 16 = 6 - 5t$

$+5t \qquad +5t$

$10t + 16 = 6$

$-16 \quad -16$

$\frac{10t}{10} = \frac{-10}{10}$

$t = -1$

28. $-3r + 10 = 15r - 8$

$+3r \qquad +3r$

$10 = 18r - 8$

$+8 \qquad +8$

$\frac{18}{18} = \frac{18r}{18}$

$r = 1$

29. $2(4x+2) = 4x - 12(x-1)$

$8x + 4 = 4x - 12x + 12$

$8x + 4 = -8x + 12$

$+8x \qquad +8x$

$16x + 4 = 12$

$-4 \quad -4$

$\frac{16x}{16} = \frac{8}{16}$

$x = \frac{1}{2}$

30. $12y + 6 = 6(2y + 1)$

$12y + 6 = 12y + 6$

$-12y \qquad -12y$

$6 = 6$ ...

True. infinitely many solutions

31. $3(4g+6) = 2(6g+9)$

$12g + 18 = 12g + 18$

$-12g \quad -12g$

$18 = 18$

True inf. many solutions.

32. $w - 2 + 2w = 6 + 5w$

$3w - 2 = 6 + 5w$

$-3w \quad -3w$

$-2 = 6 + 2w$

$-6 \quad -6$

$\frac{-8}{2} = \frac{2w}{2}$

$w = -4$

33. $16 = 2|x| + 8$

$-8 \quad -8$

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

$4 = |x|$

split

$x = 4$ $\quad$ $x = -4$

34. $\frac{5|x-7|}{5} = \frac{40}{5}$

$|x-7| = 8$

split

$x - 7 = 8$ $\quad$ $x - 7 = -8$

$+7 \quad +7$ $\quad$ $+7 \quad +7$

$x = 15$ $\quad$ $x = -1$

35. $\left|\frac{y}{5}\right| - 11 = -7$

$+11 \quad +11$

$\left|\frac{y}{5}\right| = 4$

split

$5 \cdot \frac{y}{5} = 4 \cdot 5$ $\quad$ $5 \cdot \frac{y}{5} = -4 \cdot 5$

$y = 20$ $\quad$ $y = -20$

36. $-2|-3+4x| + 10 = 0$

$-10 \quad -10$

$\frac{-2|-3+4x|}{-2} = \frac{-10}{-2}$

$|-3+4x| = 5$

$-3+4x = 5$ $\quad$ $-3+4x = -5$

$+3 \quad +3$ $\quad$ $+3 \quad +3$

$\frac{4x}{4} = \frac{8}{4}$ $\quad$ $\frac{4x}{4} = \frac{-2}{4}$

$x = 2$ $\quad$ $x = -\frac{1}{2}$

37. $|x-19| = -5$

No Solutions

not possible

38. $-8 = |x+5| - 8$

$+8 \qquad +8$

$0 = |x+5|$

no need to split

$x + 5 = 0$

$-5 \quad -5$

$x = -5$

39. $-2|5w-7|+9 = -7$

$-9 \quad -9$

$\frac{-2|5w-7|}{-2} = \frac{-16}{-2}$

$|5w-7| = 8$

split

$5w - 7 = 8$ $\qquad$ $5w - 7 = -8$

$+7 \quad +7$ $\qquad$ $+7 \quad +7$

$\frac{5w}{5} = \frac{15}{5}$ $\qquad$ $\frac{5w}{5} = \frac{-1}{5}$

$w = 3$ $\qquad$ $w = -\frac{1}{5}$

40. $y - 3x = 13$

$+3x \quad +3x$

$y = 13 + 3x$

41. $-x + 5y - 11 + 3x = 12$

$2x - 5y - 11 = 12$

$+11 \quad +11$

$2x - 5y = 23$

$-2x \qquad -2x$

$\frac{-5y}{-5} = \frac{23 - 2x}{-5}$

$y = \frac{23 - 2x}{-5}$

42. $2(b+a) - 7b = 15 + 4a$

$2b + 2a - 7b = 15 + 4a$

$-5b + 2a = 15 + 4a$

$-2a \qquad -2a$

$\frac{-5b}{-5} = \frac{15 + 2a}{-5}$

$b = \frac{15 + 2a}{-5}$

43. $-12 + 3a - 5c = -3(4 - c)$

$-12 + 3a - 5c = -12 + 3c$

$-3c \qquad -3c$

$-12 + 3a - 8c = -12$

$+12 \qquad +12$

$3a - 8c = 0$

$-3a \qquad -3a$

$\frac{-8c}{-8} = \frac{-3a}{-8}$

$c = \frac{3a}{8}$