Write the equation of the line in slope-intercept form.

15. through (3, –2), slope = 4/5.

$y = \frac{4}{5}(x-3)-2 \quad y = \frac{4}{5}x - \frac{12}{5} - \frac{10}{5}$

16. through the points (–1, –4) and (3, 2)

$\frac{2-(-4)}{3-(-1)} = \frac{6}{4} = \frac{3}{2} \leftarrow m \quad y = \frac{3}{2}(x+1)-4$

$\boxed{y = \frac{4}{5}x - \frac{22}{5}}$

17. through (–2, 4) with slope = 0.

$y = 0(x+2)+4 \quad \boxed{y = 4}$

$y = \frac{3}{2}x + \frac{3}{2} - 4\frac{8}{2} \rightarrow \boxed{y = \frac{3}{2}x - \frac{5}{2}}$

18. through (2, –5) parallel to the line 3x – y = 7.

$m = 3 \quad y = 3(x-2)-5 \quad y = 3x-6-5$

$-3x \quad -3x \quad -y = -3x+7 \quad y = 3x-7$

19. through (2, –3) and perpendicular to the line 2x + 5y = 3.

$m = \frac{5}{2} \quad y = \frac{5}{2}(x-2)-3 \quad y = \frac{5}{2}x - 5 - 3$

$5y = -2x+3 \quad y = \frac{-2}{5}x + \frac{3}{5}$

$\boxed{y = 3x-11} \quad \boxed{y = \frac{5}{2}x - 8}$

Solve the equations algebraically.

20. $2(5-2y)-3(1-y) = y+1$

$10-4y-3+3y = y+1$

$7-y = y+1 \quad -6 = 2y$

$\boxed{y = +3}$

21. $|4x+1| = 3$

22. $\frac{x-5}{2} + \frac{3x}{5} = -3 \cdot 10$

$5(x-5)+6x = -30$

$5x-25+6x = -30$

$11x - 25 = -30$

$+25 \quad +25$

$11x = -5$

$\boxed{x = -\frac{5}{11}}$

Solve each quadratic algebraically.

23. $x^2 + 16 = 10x$

$x^2 - 10x + 16 = 0$

$(x-8)(x-2) = 0$

$\boxed{x = 8, 2}$

24. $4m^2 - 16m = 48$

$4m^2 - 16m - 48 = 0$

$4(m^2 - 4m - 12) = 0$

$4(m-6)(m+2)$

$\boxed{m = 6, -2}$

25. $4x^2 + 7 = 55$

$-7 \quad -7$

$4x^2 = 48$

$\sqrt{x^2} = \sqrt{12}$

$\boxed{x = \pm 2\sqrt{3}}$

26. $2x^2 = -7x + 12$

$2x^2 + 7x - 12 = 0$

$x = \frac{-7 \pm \sqrt{49-4(2)(-12)}}{2(2)}$

$x = \frac{-7 \pm \sqrt{49+96}}{4}$

$\boxed{x = \frac{-7 \pm \sqrt{145}}{4}}$

27. $2x^2 + 5x + 6 = 0$

$x = \frac{-5 \pm \sqrt{25-4(2)(6)}}{2(2)}$

$x = \frac{-5 \pm \sqrt{-23}}{4}$

$\boxed{x = \frac{-5 \pm i\sqrt{23}}{4}}$

28. $\frac{3(3x-1)^2}{3} = \frac{21}{3}$

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

$3x-1 = \pm\sqrt{7}$

$3x = 1 \pm \sqrt{7}$

$\boxed{x = \frac{1 \pm \sqrt{7}}{3}}$