

p. 138: <sup>18</sup>~~12-20~~ even, 24-30 even

$$12. \sqrt{3t+4} = 2$$

$$3t+4 = 4$$

$$3t = 0$$

$$t = 0$$

$$14. \sqrt{5t+3} = -2$$

$\emptyset$

$$16. \sqrt[3]{1-2x} - 1 = 0$$

$$\sqrt[3]{1-2x} = 1$$

$$1-2x = 1$$

$$-2x = 0$$

$$x = 0$$

$$18. \sqrt[5]{2x-3} = -1$$

$$2x-3 = -1$$

$$2x = 2$$

$$x = 1$$

$$20. (\sqrt[4]{x^2+16})^4 = (\sqrt{5})^4$$

$$x^2+16 = 25$$

$$x^2 = 9$$

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

$$24. \sqrt{12-x} = x$$

$$12-x = x^2$$

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

$$0 = (x+4)(x-3)$$

$$x = -4 \quad \boxed{x = 3}$$

$$26. (\sqrt{x^2-x-8})^2 = (x+5)^2$$

$$x^2-x-8 = x^2+10x+25$$

$$-11x = 33$$

$$\boxed{x = -3} \checkmark$$

$$28. 2 + \sqrt{12-2x} = x$$

$$(\sqrt{12-2x})^2 = (x-2)^2$$

$$12-2x = x^2-4x+4$$

$$0 = x^2-2x-8$$

$$0 = (x-4)(x+2)$$

$$\boxed{x = 4} \checkmark \quad x = -2 \times$$

$$30. \sqrt{3x+7} + \sqrt{x+2} = 1$$

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

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

$$3x+7 = 1 - 2\sqrt{x+2} + x+2$$

$$2x+4 = -2\sqrt{x+2}$$

$$(-x-2)^2 = (\sqrt{x+2})^2$$

$$x^2+4x+4 = x+2$$

$$x^2+3x+2 = 0$$

$$(x+2)(x+1) = 0$$

$$\boxed{x = -2} \checkmark \quad x = -1 \times$$