



$$\textcircled{4} \quad x^2 - 6x + 8 = 0$$

$$\quad \quad \quad -8 \quad -8$$


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$$x^2 - 6x \quad \quad = -8$$

$$x^2 - 6x + 9 = -8 + 9$$

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

$$x - 3 = \pm 1$$

$$x - 3 = 1 \quad \vee \quad x - 3 = -1$$

$$x = 4 \quad \vee \quad x = 2$$

$$\boxed{\{2, 4\}}$$

$$\textcircled{5} \quad x^2 - 4x = 7$$

$$x^2 - 4x + 4 = 7 + 4$$

$$\sqrt{(x-2)^2} = \sqrt{11}$$

$$x - 2 = \pm \sqrt{11}$$

$$x - 2 = \sqrt{11} \quad \vee \quad x - 2 = -\sqrt{11}$$

$$x = 2 + \sqrt{11} \quad \vee \quad x = 2 - \sqrt{11}$$

$$\boxed{\{2 + \sqrt{11}, 2 - \sqrt{11}\}}$$

$$(6) \frac{4}{\sqrt{12}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{4\sqrt{3}}{\sqrt{36}} = \frac{4\sqrt{3}}{6} = \boxed{\frac{2\sqrt{3}}{3}}$$

$$(7) \frac{(\sqrt{5} - \sqrt{7})}{\sqrt{5}} \cdot \frac{(\sqrt{5})}{(\sqrt{5})}$$

$$= \boxed{\frac{5 - \sqrt{35}}{5}}$$

$$(8) \frac{6}{(\sqrt{5} + 2)} \cdot \frac{(\sqrt{5} - 2)}{(\sqrt{5} - 2)}$$

$$= \frac{6(\sqrt{5} - 2)}{5 - 4} = \frac{6(\sqrt{5} - 2)}{1} = \boxed{6\sqrt{5} - 12}$$

$$(9) \frac{(3 + \sqrt{2})}{(\sqrt{2} - 5)} \cdot \frac{(\sqrt{2} + 5)}{(\sqrt{2} + 5)}$$

$$= \frac{3\sqrt{2} + 15 + 2 + 5\sqrt{2}}{2 - 25}$$

$$= \boxed{\frac{17 + 8\sqrt{2}}{-23}}$$