

②  $\sqrt{8-4y} = \sqrt{8-4(10)} = \sqrt{8-40} = \sqrt{-32}$  Not a real number because it is negative square

③  $\sqrt{x+12} = \sqrt{-6+12} = \sqrt{6}$  Real number

⑥  $\sqrt{3y}$

$$\begin{array}{r} 3y \geq 0 \\ \hline 3 \quad 3 \\ \hline y \geq 0 \end{array}$$

⑧  $\sqrt{y-8}$

$$\begin{array}{r} y-8 \geq 0 \\ \hline +8 \quad +8 \\ \hline y \geq 8 \end{array}$$

⑨  $\sqrt{x+8}$

$$\begin{array}{r} x+8 \geq 0 \\ \hline -8 \quad -8 \\ \hline x \geq -8 \end{array}$$

⑩  $\sqrt{x+6}$

$$\begin{array}{r} x+6 \geq 0 \\ \hline -6 \quad -6 \\ \hline x \geq -6 \end{array}$$

⑮  $\sqrt{t^2+5}$

$$\begin{array}{r} t^2+5 \geq 0 \\ \hline -5 \quad -5 \\ \hline t^2 \geq -5 \end{array}$$

Any value will work since  $t^2$  will always result in a number that is positive and all positive numbers are greater than -5.

⑰  $\sqrt{x^2} = x$

⑳  $\sqrt{y^2} = -7$

Not possible. No square root can be negative.

㉑  $\sqrt{4a^2} = 2a$

㉒  $\sqrt{(-7)^2} = \sqrt{49} = 7$

㉓  $-\sqrt{x^2} = -3$

$$\begin{array}{r} -\sqrt{x^2} = -3 \\ \hline -1 \quad -1 \\ \hline (\sqrt{x^2})^2 = (3)^2 \\ \hline \sqrt{x^2} = \sqrt{9} \\ \hline x = 3 \text{ or } -3 \end{array}$$

㉔  $\sqrt{(-4d)^2} = \sqrt{16d^2} = 4d$

㉕  $\sqrt{(-3b)^2} = \sqrt{9b^2} = 3b$

㉖  $\sqrt{(x-7)^2} = x-7$

$$\textcircled{34} \quad \sqrt{t^2} = \sqrt{49}$$

$$t = 7 \text{ or } -7$$

$$\textcircled{35} \quad (\sqrt{(x-3)^2})^2 = 5^2$$

$$\sqrt{(x-3)^2} = \sqrt{25}$$

$$x-3 = 5 \text{ or } -5$$

$$x-3 = 5$$

$$\begin{array}{r} +3 \quad +3 \\ \hline \end{array}$$

$$x = 8$$

$$x-3 = -5$$

$$\begin{array}{r} +3 \quad +3 \\ \hline \end{array}$$

$$x = -2$$