Solve the following equations. SHOW YOUR WORK. Check your answers.

1.
$$x^2 + 1 = 26$$

2.
$$\sqrt{x-2} = 2$$

3.
$$\sqrt{3x} - 8 = 6$$

4.
$$\frac{x}{8} + \frac{3}{4} = -2$$

$$5. \quad \frac{x}{8} + \frac{3}{4} = -\frac{1}{2}$$

$$6. \quad \frac{3}{2x} + \frac{x+2}{x} = 2$$