Mathematical Typesetting

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1.
$$(x-2)(x+4) = 7$$

$$(x-2)(x+4) = 7$$
$$x^{2} + 2x - 8 = 7$$
$$x^{2} + 2x - 8 - 7 = 0$$
$$x^{2} + 2x - 15 = 0$$
$$(x-3)(x+5) = 0$$

Therefore, x = 3 or x = -5

$$2. \ (x-3)^2 = 4$$

$$(x-3)^2 = 4$$
$$(x-3) = \sqrt{4}$$
$$(x-3) = \pm 2$$
$$x = 3-2$$
$$x = 3+2$$

Therefore, x = 5 or x = 1

3.
$$\sqrt{(x-2)} + 2 = 4$$

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

$$\sqrt{(x-2)} = 4 - 2$$

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

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

$$x - 2 = (2)^{2}$$

$$x - 2 = 4$$

Therefore, x = 6