1. $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

2. $x = \frac{-2 \pm \sqrt{(2)^2-4(5)(-1)}}{2(5)} = \frac{-2 \pm \sqrt{4+20}}{10} = \frac{-2 \pm \sqrt{24}}{10}$

$\frac{-2 \pm \sqrt{4} \cdot \sqrt{6}}{10} = \frac{-2 \pm 2\sqrt{6}}{10}$

$x = \frac{-2+2\sqrt{6}}{10}$ or $x = \frac{-2-2\sqrt{6}}{10}$

$x = \frac{-1+\sqrt{6}}{5}$ or $x = \frac{-1-\sqrt{6}}{5}$

3. a. $\sqrt{175} = \sqrt{25} \cdot \sqrt{7} = 5\sqrt{7}$

b. $\sqrt{18} = \sqrt{9} \cdot \sqrt{2} = 3\sqrt{2}$

c. $\frac{9}{\sqrt{48}} \cdot \frac{\sqrt{48}}{\sqrt{48}} = \frac{9\sqrt{48}}{48} = \frac{9 \cdot \sqrt{16} \cdot \sqrt{3}}{48} = \frac{9 \cdot 4 \cdot \sqrt{3}}{48}$

$\frac{36\sqrt{3}}{48} = \frac{3\sqrt{3}}{4}$

d. $\frac{3}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{3\sqrt{5}}{5}$

4. $\frac{3x}{7} = \frac{2x+1}{5}$

$15x = 7(2x+1)$

$15x = 14x + 7$

$-14x \quad -14x$

$x = 7$

5. $\frac{7}{11} = \frac{x}{15}$

$7 \cdot 15 = 11x$

$105 = 11x$

$x = \frac{105}{11}$

6. $\frac{5}{7} = \frac{9}{b+2}$

$63 = 5b + 10$

$53 = 5b$

$\frac{53}{5} = b$

$b = 10.6$

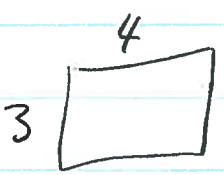
$\frac{5}{7} = \frac{a}{11}$

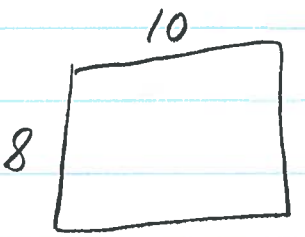
$55 = 7a$

$a = \frac{55}{7}$

$a = 7.86$

7.





$\frac{3}{4} = \frac{8}{x}$

$3x = 32$

$x = 10.67$

↑ doesn't fit

$\frac{3}{4} = \frac{x}{10}$

$30 = 4x$

$7.5 = x$

↑ fits

so dimensions are 7.5 by 10