

CTS $a \neq 1$

f. **ex 1** $2x^2 + 8x - 7 = 0$

$$2(x^2 + 4x + \underline{(9/2)}) - \underline{a \cdot (b/2)^2} - 7 = 0$$

$$2(x^2 + 4x + 4) - 8 - 7 = 0$$

$$2(x+2)^2 - 15 = 0$$

$$(x+b/2)^2$$

$$2(x+2)^2 = 15$$

$$(x+2)^2 = 15/2$$

$$x+2 = \pm \sqrt{\frac{15}{2}}$$

$$x = -2 \pm \sqrt{\frac{15}{2}}$$

rationalize
denom

$$x = -2 \pm \frac{\sqrt{15}}{\sqrt{2}} \left(\frac{\sqrt{2}}{\sqrt{2}} \right)$$

$$x = -2 \pm \frac{\sqrt{30}}{2}$$

ex 2 $3x^2 + 18x - 5 = 0$

$$3(x^2 + 6x + \underline{9}) - \underline{27} - 5 = 0$$

$$3(x+3)^2 - 32 = 0$$

$$(x+3)^2 = 32/3$$

$$x+3 = \pm \sqrt{\frac{32}{3}} \rightarrow$$

$$x = -3 \pm \frac{\sqrt{32}}{\sqrt{3}} \left(\frac{\sqrt{3}}{\sqrt{3}} \right)$$

ex 3 $2x^2 + 10x - 5 = 0$

$$x = -3 \pm \frac{\sqrt{96}}{3} = \boxed{-3 \pm \frac{4\sqrt{6}}{3}}$$