Factoring

1. $x^2 - 15x = -56$

$x^2 - 15x + 56 = 0$

$(x-7)(x-8) = 0$

$x = 7 \quad x = 8$

2. $4x(2x-1) = 0$

$x = 0 \quad x = \frac{1}{2}$

3. $3x^2 - 2x - 5 = 0$

$(3x-5)(x+1) = 0$

$x = \frac{5}{3} \quad x = -1$

Choice 7

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

$x^2 - 2x + 1 = 0$

$(x-1)^2 = 0$

$x = 1$

5) $2t^2 + 3x - 11 = 0$

$x = \frac{-3 \pm \sqrt{3^2 - 4(2)(-11)}}{2(2)}$

$x = \frac{3 \pm \sqrt{97}}{4}$

Square Roots

6) $6x^2 - 21 = 33$

$6x^2 = 54$

$x^2 = 9$

$x = \pm 3$

7) $(x-12)^2 - 54 = 0$

$(x-12)^2 = 54$

$x - 12 = \pm\sqrt{54}$

$x = 12 \pm 3\sqrt{6}$

8) $5(x+4)^2 = 9$

$(x+4)^2 = \frac{9}{5}$

$x + 4 = \pm\frac{3\sqrt{5}}{5}$

$x = -4 \pm \frac{3\sqrt{5}}{5}$

Choice 2

9) $x^2 - 14x - 32 = 0$

$(x - 16)(x + 2) = 0$

$x = 16 \quad x = -2$

10) $7x^2 + 10 = 18$

$7x^2 = 8$

$\sqrt{x^2} = \sqrt{\frac{8}{7} \cdot \frac{\sqrt{7}}{\sqrt{7}}}$

$x = \pm \frac{2\sqrt{14}}{7}$

Completing the Square

11) $x^2 + 12x = 5$

$x^2 + 12x + 36 = 5 + 36$

$(x + 6)^2 = 41$

$x + 6 = \pm\sqrt{41}$

$x = -6 \pm \sqrt{41}$

12) $3p^2 - 30p - 12 = 6p$

$3p^2 - 36p - 12 = 0$

$p^2 - 12p - 4 = 0$

$p^2 - 12p = 4$

$p^2 - 12p + 36 = 4 + 36$

$(p - 6)^2 = 40$

$p - 6 = \pm 2\sqrt{10}$

$p = 6 \pm 2\sqrt{10}$

Choice 3

13) $k^2 - 8k - 7 = 0$

$k^2 - 8k + 16 = 7 + 16$

$(k-4)^2 = 23$

$k - 4 = \pm\sqrt{23}$

$k = 4 \pm \sqrt{23}$

14) $\frac{1}{2}(x-8)^2 = 3$

$(x-8)^2 = 6$

$x - 8 = \pm\sqrt{6}$

$x = 8 \pm \sqrt{6}$

Choice 4

15) $5x^2 - 21 = 39$

$5x^2 = 60$

$x^2 = 12$

$x = \pm 2\sqrt{3}$

16) $6x^2 + 5x + 1 = 0$

$(2x+1)(3x+1) = 0$

$x = -\frac{1}{2}$ $x = -\frac{1}{3}$