Mathematics 10D

Q.07 – Solving By Factoring

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Factor, then solve!

$$x^2 + 10x + 21 = 0$$

(x) 21
(+) 10
3, 7

$(x+3)(x+7)=0$

$x+3=0$ $\quad x+7=0$

-3 $\quad -7$

$x=-3$ and $x=-7$ are the solutions.

Factor to solve another!

$$20x^2 - 14x - 24 = 0$$

$\frac{2(10x^2 - 7x - 12)}{2} = \frac{0}{2}$

$10x^2 - 7x - 12 = 0$

$10x^2 - 15x + 8x - 12 = 0$

$5x \qquad +4$

$(5x + 4)(2x - 3) = 0$

$-\frac{4}{5} \qquad +\frac{3}{2}$

$x = -\frac{4}{5}$ and $x = \frac{3}{2}$ are the zeros

(x) -120

(+) -7

$1, -120$

$2, -60$

$3, -40$

$4, -30$

$5, -24$

$6, 20$

$8, -15$

Simplify, then factor to solve.

$$2x^2 - 11x - 4 = 2$$

-2 -2

$$2x^2 - 11x - 6 = 0$$

(x) -12

(1) -11 $\quad -12, +1$

$$2x^2 - 12x + 1x - 6 = 0$$

$2x$ $\quad +1$

$$(2x+1)(x-6) = 0$$

$-\frac{1}{2}$ $\quad 6$

$x = -\frac{1}{2}$ and $x = 6$ are the two solutions

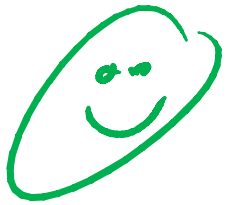
$2x^2 - 11x - 4 = 2$

$2(6)^2 - 11(6) - 4 = 2$

$72 - 66 - 4 = 2$

$2 = 2$

✓



Whoah! What's this?!?

$$36x^2 - 174x + 18 = -6x^2 - 6$$

$$42x^2 - 174x + 24 = 0$$

$$6$$

$$7x^2 - 29x + 4 = 0$$

(x) 28 $\quad -28, -1$

(+) -29

$$7x^2 - 28x \quad -1x + 4 = 0$$

$7x \qquad -1$

$$(7x - 1)(x - 4) = 0$$

$x = \frac{1}{7} \qquad x = 4$

$36x^2 - 174x + 18 = -6x^2 - 6$

$36(4)^2 - 174(4) + 18 = -6(4)^2 - 6$

$576 - 696 + 18 = -96 - 6$

$-102 = -102$