Fecha:

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UNIVERSIDAD INTERAMERICANA PARA EL DESARROLLO

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23234-LMEI-MTS01-Álgebra Superior

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Trabajo:

Actividad de Aprendizaje 6

UNID

FORMANDO CON VALORES

$$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

a b c

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

$\frac{5 \pm \sqrt{25-24}}{6}$

$\frac{5 \pm 1}{6}$

$x1 = \frac{5+1}{6}$ $\quad x2 = \frac{5-1}{6}$

$x1 = \frac{6}{6}$ $\quad x2 = \frac{4}{6}$

$x1 = 1$ $\quad x2 = \frac{2}{3}$

a b c

$4x^2 + 3x - 22 = 0$

$\frac{-3 \pm \sqrt{9+352}}{8}$

$\frac{-3 \pm \sqrt{361}}{8}$

$\frac{-3 \pm 19}{8}$

$x1 = \frac{-3+19}{8}$ $\quad x2 = \frac{-3-19}{8}$

$x1 = \frac{16}{8}$ $\quad x2 = \frac{-22}{8}$

$x1 = 2$ $\quad x2 = \frac{-11}{4}$

$x^2 + 11x = -24 = x^2 + 11x + 24 = 0$

a b c

$\frac{-11 \pm \sqrt{121-96}}{2}$

$\frac{-11 \pm \sqrt{25}}{2}$

$\frac{-11 \pm 5}{2}$

$x1 = \frac{-11+5}{2}$ $\quad x2 = \frac{-11-5}{2}$

$x1 = \frac{-6}{2}$ $\quad x2 = \frac{-16}{2}$

$x1 = -3$ $\quad x2 = -8$

$x^2 = 16x - 63 = x^2 - 16x + 63 = 0$

a b c

$\frac{16 \pm \sqrt{256-252}}{2}$

$\frac{16 \pm \sqrt{4}}{2}$

$\frac{16 \pm 2}{2}$

$x1 = \frac{16+2}{2}$ $\quad x2 = \frac{16-2}{2}$

$x1 = \frac{18}{2}$ $\quad x2 = \frac{14}{2}$

$x1 = 9$ $\quad x2 = 7$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$12x - 4 - 9x^2 = 0 = -9x^2 + 12x - 4 = 0$

$a \quad b \quad c$

$$\frac{-12 \pm \sqrt{144 - 144}}{-18}$$

$$\frac{-12 \pm 0}{-18}$$

$$X1 = \frac{-12 + 0}{-18} \qquad X2 = \frac{-12 - 0}{-18}$$

$$X1 = \frac{-12}{-18} \qquad X2 = \frac{-12}{-18}$$

$$X1 = \frac{-2}{-3} \qquad X2 = \frac{-2}{-3}$$

$5x^2 - 7x - 90 = 0$

$a \quad b \quad c$

$$\frac{7 \pm \sqrt{49 + 1800}}{10}$$

$$\frac{7 \pm \sqrt{1849}}{10}$$

$$\frac{7 \pm 43}{10}$$

$$X1 = \frac{7 + 43}{10} \qquad X2 = \frac{7 - 43}{10}$$

$$X1 = \frac{50}{10} \qquad X2 = \frac{-36}{10}$$

$$X1 = 5 \qquad X2 = \frac{-18}{5}$$

$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$6x^2 = x + 222 = 6x^2 - x - 222 = 0$

$\frac{1 \pm \sqrt{1+5328}}{12}$

$\frac{1 \pm \sqrt{5329}}{12}$

$\frac{1 \pm 73}{12}$

$x1 = \frac{1+73}{12}$ $\quad x2 = \frac{1-73}{12}$

$x1 = \frac{74}{12}$ $\quad x2 = \frac{-72}{12}$

$x1 = \frac{37}{6}$ $\quad x2 = -6$

$x + 11 = 10x^2 = -10x^2 + x + 11 = 0$

$\frac{-1 \pm \sqrt{1+440}}{-20}$

$\frac{-1 \pm \sqrt{441}}{-20}$

$\frac{-1 \pm 21}{-20}$

$x1 = \frac{-1+21}{-20}$ $\quad x2 = \frac{-1-21}{-20}$

$x1 = \frac{20}{-20}$ $\quad x2 = \frac{-22}{-20}$

$x1 = -1$ $\quad x2 = \frac{-11}{-10}$

$49x^2 - 70x + 25 = 0$

$\frac{70 \pm \sqrt{4900-4900}}{98}$

$\frac{70 \pm 0}{98}$

$x1 = \frac{70+0}{98}$ $\quad x2 = \frac{70-0}{98}$

$x1 = \frac{70}{98}$ $\quad x2 = \frac{70}{98}$

$x1 = \frac{5}{7}$ $\quad x2 = \frac{5}{7}$

$12x - 7x^2 + 64 = 0 = -7x^2 + 12x + 64 = 0$

$\frac{-12 \pm \sqrt{144+1792}}{-14}$

$\frac{-12 \pm \sqrt{1936}}{-14}$

$\frac{-12 \pm 44}{-14}$

$x1 = \frac{-12+44}{-14}$ $\quad x2 = \frac{-12-44}{-14}$

$x1 = \frac{32}{-14}$ $\quad x2 = \frac{-56}{-14}$

$x1 = \frac{16}{-7}$ $\quad x2 = 4$

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

$\frac{-15 \pm \sqrt{225 - 224}}{2}$

$\frac{-15 \pm 1}{2}$

$x1 = \frac{-15+1}{2}$ $\quad$ $x2 = \frac{-15-1}{2}$

$x1 = \frac{-14}{2}$ $\quad$ $x2 = \frac{-16}{2}$

$x1 = -7$ $\quad$ $x2 = -8$

$32x^2 + 18x - 17 = 0$

$\frac{-18 \pm \sqrt{324 + 2176}}{64}$

$\frac{-18 \pm \sqrt{2500}}{64}$

$\frac{-18 \pm 50}{64}$

$x1 = \frac{-18+50}{64}$ $\quad$ $x2 = \frac{-18-50}{64}$

$x1 = \frac{32}{64}$ $\quad$ $x2 = \frac{-68}{64}$

$x1 = \frac{1}{2}$ $\quad$ $x2 = \frac{17}{16}$

$$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

a b c

$176x = 121 + 64x^2 \rightarrow -64x^2 + 176x - 121 = 0$

$$\frac{-176 \pm \sqrt{30976 - 30976}}{-128}$$

$$\frac{-176 \pm 0}{-128}$$

$$x_1 = \frac{-176 + 0}{-128} \qquad x_2 = \frac{-176 - 0}{-128}$$

$$x_1 = \frac{-176}{-128} \qquad x_2 = \frac{-176}{-128}$$

$$x_1 = \frac{-11}{-8} \qquad x_2 = \frac{-11}{-8}$$

a b c

$8x + 5 = 36x^2 \rightarrow -36x^2 + 8x + 5 = 0$

$$\frac{-8 \pm \sqrt{64 + 720}}{-72}$$

$$\frac{-8 \pm \sqrt{784}}{-72}$$

$$\frac{-8 \pm 28}{-72}$$

$$x_1 = \frac{-8 + 28}{-72} \qquad x_2 = \frac{-8 - 28}{-72}$$

$$x_1 = \frac{20}{-72} \qquad x_2 = \frac{-36}{-72}$$

$$x_1 = \frac{5}{-18} \qquad x_2 = \frac{1}{2}$$

a b c

$27x^2 + 12x - 7 = 0$

$$\frac{-12 \pm \sqrt{144 + 756}}{54}$$

$$\frac{-12 \pm \sqrt{900}}{54}$$

$$\frac{-12 \pm 30}{54}$$

$$x1 = \frac{-12 + 30}{54} \qquad x2 = \frac{-12 - 30}{54}$$

$$x1 = \frac{18}{54} \qquad x2 = \frac{-42}{54}$$

$$x_1 = \frac{9}{27} = \frac{1}{3} \qquad x2 = \frac{-21}{27} = \frac{-7}{9}$$

$$\frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$15x = 25x^2 + 2$ $\quad -25x^2 + 15x - 2 = 0$

$$\frac{-15 \pm \sqrt{225-200}}{-50}$$

$$\frac{-15 \pm \sqrt{25}}{-50}$$

$$\frac{-15 \pm 5}{-50}$$

$x1 = \frac{-15+5}{-50}$ $\quad x2 = \frac{-15-5}{-50}$

$x1 = \frac{-10}{-50}$ $\quad x2 = \frac{-20}{-50}$

$x1 = \frac{-1}{-5}$ $\quad x2 = \frac{-2}{-5}$

$8x^2 - 2x - 3 = 0$

$$\frac{2 \pm \sqrt{4+96}}{16}$$

$$\frac{2 \pm \sqrt{100}}{16}$$

$$\frac{2 \pm 10}{16}$$

$x1 = \frac{2+10}{16}$ $\quad x2 = \frac{2-10}{16}$

$x1 = \frac{12}{16}$ $\quad x2 = \frac{-8}{16}$

$x1 = \frac{3}{4}$ $\quad x2 = \frac{-1}{2}$

$105 = x + 2x^2 = -2x^2 - x + 105 = 0$

$$\frac{1 \pm \sqrt{1+840}}{-4}$$

$$\frac{1 \pm \sqrt{841}}{-4}$$

$$\frac{1 \pm 29}{-4}$$

$x1 = \frac{1+29}{-4}$ $\quad x2 = \frac{1-29}{-4}$

$x1 = \frac{30}{-4}$ $\quad x2 = \frac{-28}{-4}$

$x1 = \frac{15}{-2}$ $\quad x2 = \frac{-7}{-1} = 7$