PRACTICE QUESTIONS: Solve by Factoring

Date: Solutions.

STEPS:

1. Set the equation equal to 0.
2. Factor.
3. Set each of the factors equal to zero and solve.

PRACTICE: Solve by factoring

a. $x^2 - 5x + 4 = 0$

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

$x-1=0$ $\quad$ $x-4=0$

$\boxed{x=0}$ $\quad$ $\boxed{x=4}$

$\therefore x=0$ OR $x=4$

b. $x^2 - 3x - 10 = 0$

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

$x-5=0$ $\quad$ $x+2=0$

$\boxed{x=5}$ $\quad$ $\boxed{x=-2}$

$\therefore x=5$ OR $x=-2$.

c. $x^2 + 2x - 15 = 0$

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

$x+5=0$ $\quad$ $x-3=0$

$\boxed{x=-5}$ $\quad$ $\boxed{x=3}$

$\therefore x=-5$ OR $x=3$

d. $x^2 - 36 = 0$

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

$x+6=0$ $\quad$ $x-6=0$

$\boxed{x=-6}$ $\quad$ $\boxed{x=6}$

$\therefore x=-6$ OR $x=6$.

e. $64x^2 - 9 = 0$

$(8x+3)(8x-3) = 0$

$8x+3=0$ $\quad$ $8x-3=0$

$\frac{8x}{8} = \frac{-3}{8}$ $\quad$ $\frac{8x}{8} = \frac{3}{8}$

$\boxed{x=\frac{-3}{8}}$ $\quad$ $\boxed{x=\frac{3}{8}}$

f. $x^2 - 5x = 0$ + common factor!

$x(x-5) = 0$

$\boxed{x=0}$ $\quad$ $x-5=0$

$\boxed{x=5}$

$\therefore x=0$ OR $x=5$.

g. $x^3 - 16x = 0$

$x(x^2-16) = 0$ + common factor

$x(x+4)(x-4) = 0$ + diff. of squares

$\boxed{x=0}$ $\quad$ $x+4=0$ $\quad$ $x-4=0$

$\boxed{x=-4}$ $\quad$ $\boxed{x=4}$

h. $2x^2 - 4x - 70 = 0$ + common factor

$2(x^2-2x-35) = 0$ + simple trinomial.

$2(x-7)(x+5) = 0$

$x-7=0$ $\quad$ $x+5=0$

$\boxed{x=7}$ $\quad$ $\boxed{x=-5}$