Algebra 1 ECA Remediation

Name Answer Key

Homework 33.3

Solve each equation with the quadratic formula.

1) $n^2 + 5n - 14 = 0$

$a = 1$
$b = 5$
$c = -14$

$25 + 56 = 81$

$n = \frac{-5 \pm \sqrt{(5)^2 - 4(1)(-14)}}{2(1)}$

$= \frac{-5 \pm \sqrt{81}}{2}$

$= \frac{-5+9}{2}$ or $\frac{-5-9}{2}$

$= \frac{4}{2} = 2$ $\quad -\frac{14}{2} = -7$

2) $6k^2 + 12k - 90 = 0$

$a = 6$
$b = 12$
$c = -90$

$144 + 2160 = 2304$

$k = \frac{-12 \pm \sqrt{(12)^2 - 4(6)(-90)}}{2(6)}$

$= \frac{-12 \pm \sqrt{2304}}{12}$

$= \frac{-12 \pm 48}{12}$

$= \frac{-12+48}{12} = \frac{36}{12} = 3$

or $\frac{-12-48}{12} = \frac{-60}{12} = -5$

3) $8p^2 = 1 - 9p$

$+9p \quad +9p$

$8p^2 + 9p = 1$

$-1 \quad -1$

$8p^2 + 9p - 1 = 0$

$a = 8$
$b = 9$
$c = -1$

$p = \frac{-9 \pm \sqrt{(9)^2 - 4(8)(-1)}}{2(8)}$

$= \frac{-9 \pm \sqrt{81+32}}{16}$

$= \frac{-9 \pm \sqrt{113}}{16}$

$= \frac{-9 + \sqrt{113}}{16}$ or $\frac{-9 - \sqrt{113}}{16}$

4) $4x^2 - 54 = 6x$

$-6x \quad -6x$

$4x^2 - 6x - 54 = 0$

$a = 4$
$b = -6$
$c = -54$

$36 + 864 = 900$

$x = \frac{6 \pm \sqrt{(-6)^2 - 4(4)(-54)}}{2(4)}$

$= \frac{6 \pm \sqrt{900}}{8}$

$= \frac{6 \pm 30}{8}$

$\frac{6+30}{8} = \frac{36}{8} = 4.5$

or $\frac{6-30}{8} = \frac{-24}{8} = -3$

Divide.

5) $(3m^3 + 2m^2 + 30m) \div 6$

$\frac{3m^3}{6} + \frac{2m^2}{6} + \frac{30m}{6}$

$= \frac{m^3}{2} + \frac{m^2}{3} + 5m$

6) $(18n^4 + 3n^3 + 3n^2) \div 9n^2$

$\frac{18n^4}{9n^2} + \frac{3n^3}{9n^2} + \frac{3n^2}{9n^2}$

$= 2n^2 + \frac{n}{3} + \frac{1}{3}$

Factor the common factor out of each expression.

7) $-40 + 24x - 28x^2$

$-28x^2 + 24x - 40$

$-4(7x^2 - 6x + 10)$

8) $-12r^6 - 15r + 9$

$-3(4r^6 + 5r - 3)$

Answers to Homework 33.3

1) $\{2, -7\}$

2) $\{3, -5\}$

3) $\left\{\frac{-9+\sqrt{113}}{16}, \frac{-9-\sqrt{113}}{16}\right\}$

4) $\left\{4\frac{1}{2}, -3\right\}$

5) $\frac{m^3}{2} + \frac{m^2}{3} + 5m$

6) $2n^2 + \frac{n}{3} + \frac{1}{3}$

7) $4(-10 + 6x - 7x^2)$

8) $3(-4r^6 - 5r + 3)$