MPM2D0/E **SOLVING QUADRATIC EQUATIONS USING SQUARE ROOTS**

1. Solve each equation.

a) $x^2 - 5 = 11$ b) $2a^2 + 1 = 51$ c) $9c^2 - 17 = 32$

d) $2x^2 + 3 = 7$ e) $6(x^2 + 6) = 5 - 2x^2$ f) $7(2x^2 - 9) = 3(x^2 + 5) - 1$

g) $(2x - 3)(x - 5) = (x - 6)(x - 7)$ h) $2x^2 + 10 = 0$

2. Solve each equation using square roots.

a) $(x - 1)^2 = 9$ b) $(x + 2)^2 - 100 = 0$ c) $(x - 7)^2 - 25 = 0$

d) $2(x + 5)^2 = 32$ e) $-(x - 2)^2 + 12 = 0$ f) $3(x + 3)^2 - 15 = 0$

3. Write a quadratic equation that has roots:

a) ± 5 b) $\pm\sqrt{5}$ c) $\pm\sqrt{10}$ d) $\pm 2\sqrt{7}$ e) $\pm 7\sqrt{11}$

4. An integer, increased by 1 and then squared gives the result of 16. What is the integer? An algebraic solution is required. (define a variable, set up and equation, solve the equation)

ANSWERS:

1.a) $x \in \{\pm 4\}$ b) $a \in \{\pm 5\}$ c) $c \in \left\{\pm \frac{7}{3}\right\}$ d) $x \in \{\pm\sqrt{2}\}$ e) $x \in \{\}$ no real sol'n f) $x \in \{\pm\sqrt{7}\}$

g) $x \in \{\pm 3\sqrt{3}\}$ h) $x \in \{\}$ no real sol'n

2.a) $x \in \{4, -2\}$ b) $x \in \{8, -12\}$ c) $x \in \{12, 2\}$ d) $x \in \{-1, -9\}$ e) $x \in \{2\sqrt{3} + 2, -2\sqrt{3} + 2\}$

f) $x \in \{\sqrt{5} - 3, -\sqrt{5} - 3\}$

3.a) $x^2 - 25 = 0$ b) $x^2 - 5 = 0$ c) $x^2 - 10 = 0$ d) $x^2 - 28 = 0$ e) $x^2 - 539 = 0$

4. $3, -5$