

5.9 Homework Handout: Solving Quadratic Equations

1. Solve.

a) $(x-4)(x+2)=0$

b) $x^2-2x-3=0$

c) $0=-2(x+3)^2+32$

d) $x^2-10x+25=0$

e) $(3x-1)(2x+5)=0$

f) $0=4(x-1)^2-36$

2. Solve.

a) $3x^2-12x=0$

b) $(5x-4)(2x-9)=0$

c) $2(x-3)^2=0$

d) $3(x+5)^2-12=0$

e) $2x^2-11x+5=0$

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

3. Solve. Give exact answers.

a) $2(x+4)^2-12=0$

b) $2x^2-5x-12=0$

c) $3x^2-7x+2=0$

d) $5x^2+8x+11=0$

e) $3(x-1)^2+5=0$

f) $16x^2-40x+25=0$

4. Solve. Round to 2 decimal places when necessary.

a) $9x^2-4=0$

b) $3x^2-4x+2=0$

c) $10x^2-13x-3=0$

d) $5x^2-8x+1=0$

e) $2(x+3)^2-5=0$

f) $-2x^2-5x+4=0$

5. Solve. Round to 2 decimal places when necessary.

a) $5x^2+3x-3=2x^2-8x-1$ b) $14x^2-25x+12=-11x^2+5x+3$ c) $3x(2x-3)=4(1-x)$

d) $5x(2-x)=-3(3x-1)$ e) $2(3x^2-2x+1)=3(x+4)-2x(x-3)$

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

Answers:

1. a) 4, -2 b) 3, -1 c) 7, -1 d) 5 e) $\frac{1}{3}, \frac{-5}{2}$ f) 4, -2 2. a) 0, 4 b) $\frac{4}{5}, \frac{9}{2}$ c) 3 d) -3, -7 e) $\frac{1}{2}, 5$ f) 0, -2

3. a) $4 \pm \sqrt{6}$ b) $\frac{-3}{2}, 4$ c) $\frac{1}{3}, 2$ d) no solution e) no solution f) $\frac{5}{4}$

4. a) $\pm \frac{2}{3}$ b) 1.72, -0.39 c) $\frac{-1}{5}, \frac{3}{2}$ d) 1.46, 0.14 e) -1.42, -4.58 f) -3.14, 0.64

5. a) 0.17, -3.84 b) $\frac{3}{5}$ c) $\frac{4}{3}, \frac{-1}{2}$ d) 3.63, 0.17 e) 2.19, -0.57