

7.4 Applications that Lead to Quadratic Equations

1)

- a) GCF (Zero Factor Property)
- b) Factoring
- c) Graphing: TRACE
- d) Square root
- e) Quadratic formula

3) $x = 0$ or $x = -3$

5)

- a) $x = \frac{7}{10} \pm \frac{\sqrt{69}}{10}$
- b) Vertex: $(0.7, -3.45)$

7) $x = -1.38$ or $x = 0.89$

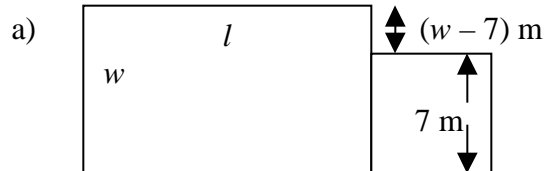
9)

- a) None
- b) Two
- c) One

11)

- a) At release $t = 0$, $h = 1056000$ ft.
- b) $t = 48.6$ sec
- c) $t = 34.3$ sec

13)



- b) Let l = length of swimming area
Let w = width of swimming area
- c) Perimeter: $2w - 7 + l = 30$
Area: $A = 37w - 2w^2$
- d) Area is max when $w = 9.25$ and $l = 18.5$ m.
- e) Width is 9.25 m, length is 18.5 m, side with dock = 2.25 m

15)

- a) No revenue is generated when price = \$0 or price = \$27.59.
- b) *price* \$13.79
- c) *price* \$18.02 or *price* \$9.57

17) Percent discount = 16%.

19) $x = 14$, $y = 19$