

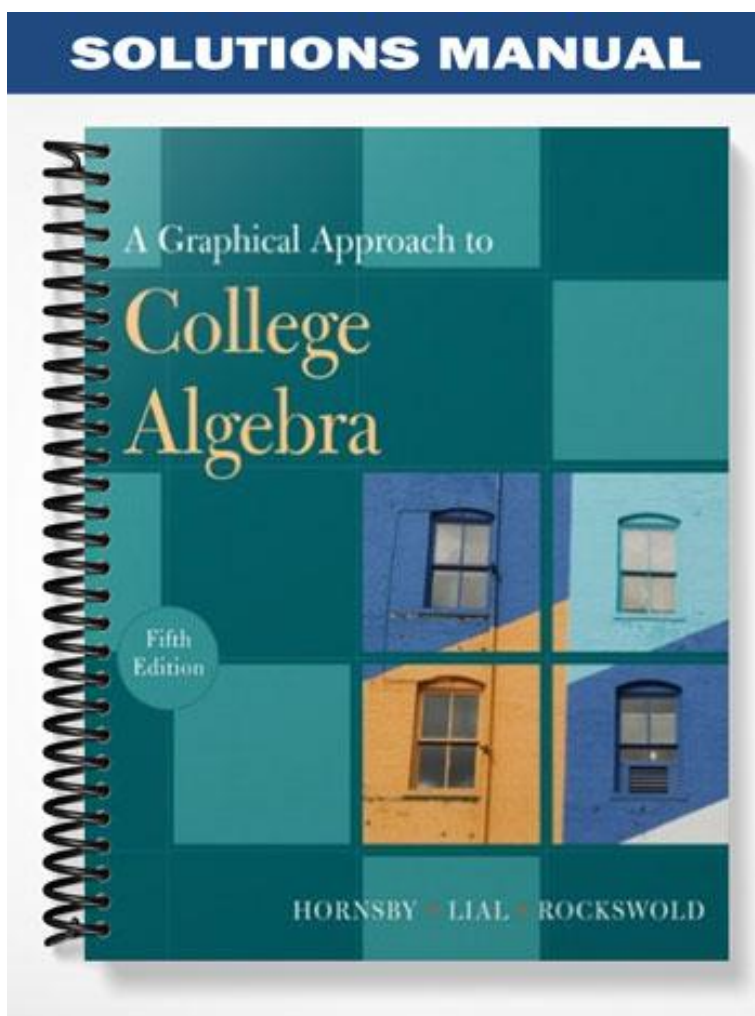
# SOLUTIONS MANUAL

A Graphical Approach to

# College Algebra

Fifth  
Edition

HORNSBY • LIAL • ROCKSWOLD



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12. (a) With an initial set-up cost of \$3300 and a production cost of \$4.50 the function is:  $C(x) = 3300 + 4.50x$
- (b) With a selling price of \$10.50 the revenue function is:  $R(x) = 10.50x$
- (c)  $P(x) = R(x) - C(x) \Rightarrow P(x) = 10.50x - (3300 + 4.50x) \Rightarrow P(x) = 6x - 3300$
- (d) To make a profit  $P(x) > 0$ , therefore  $6x - 3300 > 0 \Rightarrow 6x > 3300 \Rightarrow x > 550$   
Tyler needs to sell 551 before he earns a profit.
- (e) Graph  $y_1 = 6x - 3300$ , See Figure 12. The first integer  $x$ -value for which  $P(x) > 0$  is 551