Math 120 Intermediate Algebra

Applications Involving Quadratic Equations

Ex 1 (# 6) A turbo-jet flies 50 mph faster than a super-prop plane. If a turbo-jet goes 2000 mi in 3 hr less time than it takes the super-prop to go 2800 mi, find the speed of each plane.

Ex 2 (# 12) Two pipes are connected to the same tank. Working together, they can fill the tank in 4 hr. The larger pipe, working alone, can fill the tank in 6 hr less than the smaller one. How long would the smaller one take, working alone, to fill the tank?

Ex 3 (# 18) Solve for $k$: $N = \frac{k^2 - 3k}{2}$

Ex 4 (# 34) (Prac Prob) Falling Distance Use $4.9t^2 + v_0t = s$ (t = time in seconds, $v_0$ = initial velocity, $s$ = height of object)

a) A ring is dropped from a helicopter at an altitude of 75 m. Approximately how long does it take the ring to reach the ground? 3.9 sec

b) A coin is tossed downwards with an initial velocity of 30m/sec from an altitude of 75 m. Approximately how long does it take the coin to reach the ground? 1.9 sec

c) Approximately how far will an object fall in 2 sec, if thrown downward at an initial velocity of 20 m/sec from a helicopter? 59.6 m