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## QUADRATIC EQUATIONS

### SOLUTION 2

At  $t$  minutes past 2 p.m., the time needed by the minutes hand of a clock to show 3 p.m. was found to be 3 minutes less than  $\frac{t^2}{4}$  minutes. Find  $t$ .

**Solution:**

Time needed to show 3 p.m. =  $(60 - t)$  minutes

According to the given condition

$$\frac{t^2}{4} - 3 = 60 - t$$

Multiplying both sides by 4

$$t^2 - 12 = 240 - 4t$$

$$t^2 + 4t - 252 = 0$$

$$t^2 + 18t - 14t - 252 = 0$$

$$t(t + 18) - 14(t + 18) = 0$$

$$(t + 18)(t - 14) = 0$$

$$t = -18, 14$$

Rejecting  $t = -18$  as time cannot be negative

$$t = 14 \text{ minutes}$$