

99. (a) The problem asks for the source frequency  $f$ . We use Eq. 18-47 with great care (regarding its  $\pm$  sign conventions).

$$f' = f \left( \frac{340 - 16}{340 - 40} \right)$$

Therefore, with  $f' = 950$  Hz, we obtain  $f = 880$  Hz.

- (b) We now have

$$f' = f \left( \frac{340 + 16}{340 + 40} \right)$$

so that with  $f = 880$  Hz, we find  $f' = 824$  Hz.