Answers to Questions for Review

9.1 The $MR$ figures are 100 between outputs of 0 and 1 and also 100 between all other outputs. The $SMC$ figures are 70, between outputs of 0 and 1, and thereafter 50, 65, 95, 130, and 210. The firm should raise output to 4 because $MR$ exceeds $SMC$ up to that level; it should not raise output to 5 because $SMC$ will exceed $MR$. The profit figures for each output level on the table are $-40$ at $Q=0$, $-10$ at 1, $40$ at 2, $75$ at 3, $80$ at 4, $50$ at 5, and $-60$ at 6, and the profit at 4 is the highest of these. However, we can’t be sure that 4 is exactly the best output, because there might be more a little more profit at a slightly lower or slightly higher output.

9.2 $TFC=40$. If $TFC$ were to double, then the profit figures would be 40 less at each output. So the highest profit would still be at 4, although the profit there would now be 40 rather than 80. Note that the $SMC$ figures would all stay the same.

9.3 (a) A rise in market demand would cause the firm to produce more, and could move it from loss to profit, just as a fall in market demand had the opposite effects in Figure 9.10.

(b) A fall in the price of a fixed input would have no effect on the firm’s output, but could move the firm from loss to profit, just as in Figure 9.11 a rise in the price of a fixed input had no effect on output but moved the firm from profit to loss.

(c) A fall in the price of a variable input would cause the firm to produce more, and could move it from loss to profit, just as in Figure 9.12 a rise in the price of a variable input had the opposite effects.
9.4  \( LS \) would actually be U-shaped, sloping downwards at low outputs and then upwards.