1. (a) • Left-Hand Riemann Sum:
\[
(1.5 \text{ in/hr})(6 \text{ hrs}) + (0.6 \text{ in/hr})(6 \text{ hrs}) + (0.3 \text{ in/hr})(6 \text{ hrs}) + (0.2 \text{ in/hr})(6 \text{ hrs}) = \boxed{15.6 \text{ inches}}
\]

• Right-Hand Riemann Sum:
\[
(0.6 \text{ in/hr})(6 \text{ hrs}) + (0.3 \text{ in/hr})(6 \text{ hrs}) + (0.2 \text{ in/hr})(6 \text{ hrs}) + (0 \text{ in/hr})(6 \text{ hrs}) = \boxed{6.6 \text{ inches}}
\]

• Average:
\[
\frac{15.6 + 6.6}{2} = \boxed{11.1 \text{ inches}}
\]

(b) iii. The town probably does not flood, but there is a slight chance that it does flood.

2. \[\int_1^2 3^{2x+1} \, dx \approx 98.3.\]