1. 100,472.114

2. 4

3. 232,250.074

4. $\frac{32}{3}\, u^2$

5. $\frac{10}{3}\, u^2$

6. $8\, u^2$

7. $\frac{184\pi}{15}\, u^3$

8. $\frac{117\pi}{5} u^3$

9. $128\pi\, u^3$

10. $\frac{12\sqrt{3}}{5}\, u^3$

11. $\frac{24}{5}\, u^3$

12. x = ±1

13. $\frac{2}{\pi}$

14. $y - \left(\frac{\pi}{4} - 1\right) = -1\left(x - \frac{\pi}{4}\right)$ OR $y = -x + \frac{\pi}{2} - 1$

15. $\frac{1}{2}$

16. 0

17. $\frac{14}{(4x+2)^2}$

18. $2(x^3 + 1)^2 + 6x^2(2x + 3)(x^3 + 1)$

Calc FR

a. 96 people per hour

b. 183.5 –There was an average of 183.5 people in line each hour

c. 306 people still in line

d. t = 10 because that is where the max is on s(t).