Practice worksheet | Integration techniques and applications

Interpreting a result in context

Name: _____ Date: _____

6 questions | 12 marks

1. Water enters at 2t+3 litres/minute for 0<=t<=4. Initially there are 10 litres. Find the final amount. [2 marks]

2. Find the average temperature 20+2t degrees C over 0<=t<=4 hours. [2 marks]

3. Velocity is v=t-2 m/s for 0<=t<=4. Find displacement and total distance. [2 marks]

4. A population increases at 100 exp(0.1t) people/year for 0<=t<=10. Find the increase.
[2 marks]

5. Marginal cost is 6q+10 dollars/unit. Find the cost increase when output rises from q=0 to 5.
[2 marks]

6. A solid has cross-section area pi(1+x) squared for 0<=x<=2 metres. Find its volume.
[2 marks]