

MATH 111 – EXAM I Answers
Winter 2016

1. (a) ~ 0.67 miles per minute
(b) $t \approx 32$ minutes
(c) ~ 0.83 miles per minute
(d) $h \approx 12.5$
2. (a) shutdown price ≈ 3.50 dollars per Object; breakeven price ≈ 3.95 dollars per Object
(b) ~ 4.10 dollars
(c) i. $TC(4) \approx 22.4$ hundred dollars
ii. $VC(4) \approx 16.8$ hundred dollars
iii. $FC \approx 5.6$ hundred dollars
(d) ~ 32.4 hundred dollars
3. (a) $\frac{A(b) - A(1)}{b - 1}$
(b) the overall rate of change in the water level at $t = 21$
(c) the slope of the secant line through the graph of A at $t = 5$ and $t = 5 + h$
4. (a) $x > \frac{14}{23}$
(b) $q = 98$, $p = 652$