

SAMPLE TEST "E" -- CALCULUS

ANSWERS

1. $\sqrt{85}$

2. $y = 12x - 18$

3. 2

4. 40

5. $\frac{x - 2}{\sqrt{x^2 - 4x + 2}}$

6. $2e^x \sin(e^x) \cos(e^x)$

7. minimum at $x = 2.5$, maximum at $x = 5$

8. $\frac{dy}{dx} = \frac{2y^2 - 4xy^2}{2x^2y - 2xy + \sqrt{y}}$

9. $\frac{dr}{dt} = -\frac{3}{400}$ ft/min

10. See Graph 1 to the right.
 critical points: $x = 0, x = 3$
 inflection points: $x = 0, x = 2$
 maximum at $x = 3$
 no minima

11. $y = 1$

12. 16.5

13. $-\frac{2}{5} \cos(5x) + C$

14. $2x$

15. $\ln|x| + C$

Graph 1

