

Review for Test 3 on Nov. 18

1. Do 21 in Ex 11.10. **Hint:** Use Red Boxes 8 & 9 , P 737, similar to the way the author used these Red Boxes starting at the top of p 740 to finish his solution to Example 4.
2. (a) In Ex 11.10, do 63–68. Make use of the series in Table 1, p 743.
(b) From Another Review for Test 2, do 11, 12, 16–29.
(c) Do 28 in Ex 11.8.

In 3–7: (a) First find a cartesian equation for the curve traced out by the parametric equations. (b) Then sketch the curve traced out by the parametric equations and indicate the direction in which the point (x, y) moves as t increases.

3. $x = \cos^2 t$, $y = 2 \sin^2 t$ for $0 \leq t \leq 2\pi$
4. $x = \cos^2 t$, $y = \cos t$ for $0 \leq t \leq 3\pi$
5. $x = 3 \sin t$, $y = 2 \cos t$ for $0 \leq t \leq \frac{3\pi}{2}$
6. $x = 3 \sec t$, $y = 2 \tan t$ for $0 \leq t \leq \frac{\pi}{2}$ & $\frac{\pi}{2} \leq \pi$
7. $x = \sec t + \tan t$, $y = \sec t - \tan t$ on the same domain as in problem 6
8. Let $x = t^2 + 4$, $y = 2t^5 + t^4$.
 - (a) Find $\frac{dy}{dx}$ as a function of t .
 - (b) Find $\frac{d^2y}{dx^2}$ as a function of t .
9. Do 28 in Ex 10.2.
10. Find the arc length of each curve.
 - (a) $y = \frac{x^3}{6} + \frac{1}{2x}$ for $1 \leq x \leq 2$

(b) $y = \ln(\cos x)$ for $0 \leq x \leq \frac{\pi}{3}$

11. Do 7, 9, 11, 13, 15 in Ex 8.2.

12. In Ex 10.2, do 41, 42, 54, 59–61, 65, 66.