Last WIR

Problem 1. Sketch the curve traced out by $x = 6\cos t$, $y = 7\sin t$, $0 \leq t \leq 2\pi$.

Problem 2. Find the length of $x = 6t - 2t^3$, $y = 6t^2$ for $0 \leq t \leq 1$.

Problem 3. Find the length of $x = 6t - 2t^3$, $y = 6t^2$ from $(-4, 6)$ to $(4, 6)$.

Problem 4. Find the length of $x = e^{2t} + e^{-2t}$, $y = 5 - 4t$ for $0 \leq t \leq 1$.

Problem 5. Find the length of $x = a + e^{2t} + e^{-2t}$, $y = b - 4t$ for $0 \leq t \leq 1$ for any real numbers a and b.

Problem 6. Find the cartesian coordinates for $(1, \pi)$, $(2, 2\pi)$, $(3, \frac{\pi}{4})$, $(1, \frac{\pi}{6})$.

Problem 7. Find the polar coordinates for $(1, -1)$ and $(-1, \sqrt{3}2)$.

Problem 8. Find a cartesian equation for $r = 2\cos\theta$.

Problem 9. Find the area of the region contained in the above curve corresponding to $0 \leq \theta \leq \frac{\pi}{6}$.

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Problem 10. Find the area inside $r = 2 - 2\sin\theta$ but outside $r = 2$.

Problem 11. Sketch $r = \sin 6\theta$.

Problem 12. Find the area in one loop of $r = \sin 6\theta$.

Problem 13. Sketch $r = \cos 8\theta$.

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Problem 14. Find the area in one loop of $r = \cos 8\theta$.

Problem 15. Sketch $r = 10\cos 12\theta$.

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Problem 16. Find the area in one loop of $r = 10\cos 12\theta$.