Homework S4

Evaluate the following integrals:

1. $\displaystyle\int_0^{2\pi} \sin 3t \cos 5t \, dt$ 2. $\displaystyle\int_0^{2\pi} \cos\theta \cos 4\theta \, d\theta$

3. $\displaystyle\int \sqrt{4 - t^2} \, dt$ 4. $\displaystyle\int \frac{\sqrt{1 - 4y^2}}{y} \, dy$

5. $\displaystyle\int \frac{1}{\sqrt{4 + x^2}} \, dx$ 6. $\displaystyle\int \frac{\sqrt{1 + r^2}}{r} \, dr$

7. $\displaystyle\int \frac{1}{\sqrt{z^2 - 4}} \, dz$ 8. $\displaystyle\int \sqrt{q^2 - 3} \, dq$

9. $\displaystyle\int \frac{1}{\sqrt{y^2 + 2y}} \, dy$ 10. $\displaystyle\int \sqrt{x^2 + 2x + 5} \, dq$