1. (trigsub:nosub)
   Compute $\int t\sqrt{1-t^2}\mathrm{dt}$.

2. (trigsub:sinsub1)
   Compute $\int \sqrt{16-x^2}dx$.

3. (trigsub:sinsub2)
   Compute $\int \sqrt{25-x^2}dx$.

4. (trigsub:sinsub3)
   Compute $\int \frac{x^3}{\sqrt{4-x^2}}dx$.

5. (trigsub:sinsub4)
   Compute $\int \frac{x^3}{\sqrt{9-x^2}}dx$.

6. (trigsub:sinsub5)
   Compute $\int e^{4x}\sqrt{1-e^{2x}}dx$.

7. (trigsub:sinsub6)
   Compute $\int \frac{e^t}{\sqrt{4-e^{2t}}}dt$

8. (trigsub:cossub1)
   Compute $\int \frac{1}{y\sqrt{1-y^2}}dy$.

9. (trigsub:secsub1)
   Compute
   $$\int t^3\sqrt{t^2-4}dt$$
   . **Hints:** you will need to use the facts $\frac{d}{d\theta}\tan(\theta) = \sec^2(\theta)$ and $1 + \tan^2(\theta) = \sec^2(\theta)$.

10. (trigsub:lnsin)
    Compute $\int \frac{\ln^5(t)}{t\sqrt{1-\ln^2(t)}}dt$.

11. (trigsub:lnsec)
    Compute $\int \frac{1}{t\ln(t)\sqrt{\ln^2(t)-1}}dt$.

12. (trigsub:exp)
    Compute $\int \frac{dx}{\sqrt{1-e^{2x}}}$.

13. (trigsub:arctansub)
    Compute $\int \frac{1}{(1+x^2)\sqrt{\arctan^2(x)-1}}dx$.

14. (trigsub:sqrtsub)
Compute $\int \frac{1}{\sqrt{x}+x^{\frac{3}{2}}}dx$.