Limbering-Up Exercises in β-reduction

β-reduce each of the following by one step.

1. $\lambda x.x$
2. $x(\lambda x.x)(\lambda x.x)$
3. $(\lambda x.x)(\lambda x.x)$
4. $(\lambda x.x)(\lambda x.x)(\lambda x.x)$
5. $(\lambda x.xx)(\lambda x.xx)$
6. $x((\lambda x.xy)z)y$
7. $(\lambda x.xy)xy$
8. $(\lambda x.(\lambda y.xy))y$
9. $(\lambda x.(\lambda y.xy))(\lambda y.y)$
10. $(\lambda x.(\lambda y.xy)x)z$
11. $(\lambda x.y)(\lambda x.xx)(\lambda x.xx)$
12. $(\lambda x.y)((\lambda x.xx)(\lambda x.xx))$
13. $(\lambda x.x)(\lambda x.x)((\lambda x.xx)(\lambda x.xx))$
14. $(\lambda x.xxx)(\lambda x.xxx)$
15. $(\lambda xy.yx)(\lambda z.z)$
16. $(\lambda xy.yxy)(\lambda xy.yxy)(\lambda xy.yxy)$
17. $(\lambda xy.x(x(xy)))MN$ where M and N are any λ-terms $x, y \notin FV(NM)$
18. $S(\lambda xy.x(x(xy)))$ where $S = \lambda n.\lambda xy.x(nxy)$
19. SKK, where $S = \lambda xyz.xz(yz)$ and $K = \lambda xy.x$
20. YM, where M is any λ-term and $Y = (\lambda zx.x(zzx))(\lambda zx.x(zzx))$, $x, z \notin FV(M)$

Now reduce as them far as possible (meaning until a normal form is reached, or you are convinced there is no normal form).

Bonus question: find the normal form for

$$(\lambda xy.x(x(x(x(x(x(xy))))))) (\lambda xy.x(x(x(x(x(x(xy))))))))$$