DIRECTIONS: Simplify. When you multiply or divide, you want the SAME BASES.

1. $(10^{\pi})^2$

100^{π}

2. $(5^{-\pi})^{-1}$

5^{π}

3. $\sqrt{6^{2\pi}}$

6^{π}

4. $\sqrt[3]{4^{6\pi}}$

16^{π}

5. $\frac{10^{\sqrt{3}-2}}{10^{\sqrt{3}+2}}$

$\frac{1}{10{,}000}$

6. $\frac{6^{\sqrt{2}} * 6^{\sqrt{8}}}{6^{3\sqrt{2}}}$

1

$(\sqrt{8} = 2\sqrt{2}\,)$

7. $[(\sqrt{2})^{\pi}]^0$

1

8. $(\sqrt{3})^{\sqrt{2}}(\sqrt{3})^{-\sqrt{2}}$

1

9. $(2^{\sqrt{2}})^{-1/\sqrt{2}}$

$\frac{1}{2}$

10. $(\sqrt{2}^{\sqrt{2}})^{\sqrt{2}}$

2

11. $8^{1.2} * 2^{-3.6}$

1

12. $\frac{25^{2.4}}{5^{5.8}}$

$\frac{1}{5}$

13. $\frac{(1+\sqrt{3})^{\pi-1}}{(1+\sqrt{3})^{\pi+1}}$

$\frac{2-\sqrt{3}}{2}$ *or* $1-\frac{\sqrt{3}}{2}$

14. $\frac{(\sqrt{2}-1)^{2+\pi}}{(\sqrt{2}-1)^{\pi}}$

$3-2\sqrt{2}$

15. $\sqrt[4]{\frac{9^{1-\pi}}{9^{1+\pi}}}$

$\frac{1}{3\pi}$

16. $\sqrt{\frac{2^{\sqrt{3}+3}}{8}}$

$2^{\sqrt{3}/2}$