Indices - Past Paper Questions

1) Evaluate $2^0 + 3^{-1}$ 2

2) Evaluate $8^{\frac{2}{3}}$ 2

3) Evaluate $8^{\frac{5}{3}}$ 2

4) Evaluate $9^{\frac{3}{2}}$ 2

5) Evaluate $16^{\frac{3}{4}}$ 2

6) Simplify $2a \times a^{-4}$ 1

7) Simplify $m^5 \times m^{-8}$, give your answer with a positive power. 2

8) Simplify $m^3 \times \sqrt{m}$ 2

9) Simplify $\frac{m^5}{m^3}$ 1

10) Simplify $\frac{n^5 \times 10n}{2n^2}$ 3

11) Simplify $\frac{5p^7 \times 4p^{-2}}{2p}$ 3

12) Simplify $\frac{3a^5 \times 2a}{a^2}$ 3

13) Simplify $\frac{8p^6}{2p^3 \times p}$ 3

14) Simplify $\frac{ab^6}{a^3 b^2}$ 3

15) Simplify, expressing your answer with positive indices.
$(x^2y^4) \div (x^{-3}y^6)$ 2

16) Simplify $\frac{x^6}{y^2} \times \frac{y^3}{x^3}$ 2

17) Simplify $6x^{\frac{3}{2}} \div 2x^{\frac{1}{2}}$ 2

18) Express $y^8 \times (y^3)^{-2}$ in its simplest form. 2

19) Simplify $k^8 \times (k^2)^{-3}$ 2

20) Express $p^3(p^2 - p^{-3})$ in its simplest form. 2

21) Expand $m^{\frac{1}{2}}(2 + m^2)$ 2

22) Remove the brackets and simplify $a^{\frac{1}{2}}\left(a^{\frac{1}{2}}-2\right)$ 2

23) Express $a^{\frac{2}{3}}\left(a^{\frac{2}{3}}-a^{-\frac{2}{3}}\right)$ in its simplest form. 2

24) Expand $x^{\frac{1}{2}}(3x+x^{-2})$ 2

25) a) Evaluate $(2^3)^2$ 1

b) Hence find n, when $(2^3)^n = \frac{1}{64}$ 1