Y13 negative and fractional powers #2

Write without using negatives or fractional exponents:

1. $x^{\frac{1}{3}}$

2. $x^{\frac{-1}{4}}$

3. $x^{\frac{5}{2}}$

4. $8x^{-2}$

Write in the form ax^n where a and n can be fractional and/or negative:

5. $\sqrt{16x^5}$

6. $\dfrac{2}{\sqrt{x}}$

7. $4\left(\sqrt[3]{x}\right)^5$

8. $\dfrac{7}{x\sqrt{x}}$

Simplify and write in the form x^n:

9. $\dfrac{x}{\frac{1}{x^2}}$

10. $x(x^{-2})^2$

11. $\dfrac{x^2}{\sqrt{x}}$

12. $\dfrac{\sqrt[4]{x}}{x}$

Of the four terms which, if any, is different from the others?

13. $x^{1.5}$ $\dfrac{x^2}{\sqrt{x}}$ $\sqrt[2]{x^3}$ $\dfrac{\frac{1}{x^2}}{\frac{1}{\sqrt{x}}}$

14. $\sqrt[4]{x}$ $\dfrac{\sqrt{x}}{\sqrt[4]{x}}$ $\sqrt{\sqrt{x}}$ $x^{0.4}$

15. $\dfrac{1}{\sqrt{x}}$ $\dfrac{\sqrt{x}}{x}$ $x^{-0.5}$ $\left(\sqrt{x}\right)^{-1}$

16. $\left(\sqrt[3]{x}\right)x$ $x^{\frac{4}{3}}$ $\dfrac{x^2}{\sqrt[3]{x^2}}$ $\sqrt[3]{x^4}$

Answers: Y13 negative and fractional powers #2

Write without using negatives or fractional exponents:

1. $x^{\frac{1}{3}} =$ $\sqrt[3]{x}$

2. $x^{\frac{-1}{4}} =$ $\dfrac{1}{\sqrt[4]{x}}$

3. $x^{\frac{5}{2}} =$ $\sqrt{x^5}$ or, less usually, $\left(\sqrt{x}\right)^5$

4. $8x^{-2} =$ $\dfrac{8}{x^2}$

Write in the form ax^n where a and n can be fractional and/or negative:

5. $\sqrt{16x^5} =$ $4x^{\frac{5}{2}}$ or $4x^{2.5}$

6. $\dfrac{2}{\sqrt{x}} =$ $2x^{-0.5}$ or $2x^{\frac{-1}{2}}$

7. $4\left(\sqrt[3]{x}\right)^5 =$ $4x^{\frac{5}{3}}$

8. $\dfrac{7}{x\sqrt{x}} =$ $7x^{\frac{-3}{2}}$ or $7x^{-1.5}$

Simplify and write in the form x^n:

9. $\dfrac{x}{\frac{1}{x^2}} =$ x^3

10. $x(x^{-2})^2 =$ x^{-3}

11. $\dfrac{x^2}{\sqrt{x}} =$ $x^{\frac{3}{2}}$ or $x^{1.5}$

12. $\dfrac{\sqrt[4]{x}}{x} =$ $x^{-0.75}$ or $x^{\frac{-3}{4}}$

Of the four terms which, if any, is different from the others?

13. $x^{1.5}$ $\dfrac{x^2}{\sqrt{x}}$ $\sqrt[2]{x^3}$ are the same but $\dfrac{\frac{1}{x^2}}{\frac{1}{\sqrt{x}}} = x^{-1.5}$

14. $\sqrt[4]{x}$ $\dfrac{\sqrt{x}}{\sqrt[4]{x}}$ $\sqrt{\sqrt{x}}$ are all $= x^{0.25}$, so $x^{0.4}$ is different

15. $\dfrac{1}{\sqrt{x}}$ $\dfrac{\sqrt{x}}{x}$ $x^{-0.5}$ $\left(\sqrt{x}\right)^{-1}$ are all the same

16. $(\sqrt[3]{x})x$ $x^{\frac{4}{3}}$ $\dfrac{x^2}{\sqrt[3]{x^2}}$ $\sqrt[3]{x^4}$ are all the same