Essential Skills 1

The questions in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed

<u>Multiplying Brackets involving Indices</u>   (Non Calculator)

Multiply out and simplify:

1. $x^{\frac{1}{4}}(x^{\frac{3}{4}} + x^{-\frac{1}{4}})$

2. $x^{\frac{2}{7}}(x^{\frac{1}{7}} - x^{-\frac{2}{7}})$

3. $3x^{\frac{1}{5}}(2x^{\frac{3}{5}} - x^{-\frac{1}{5}})$

4. $4x^{\frac{2}{3}}(3x^{\frac{4}{3}} + 2x^{-\frac{2}{3}})$

5. $5x^{\frac{1}{2}}(x^{\frac{5}{2}} + x^{-\frac{1}{2}})$

6. $x^{\frac{2}{3}}(x^{\frac{1}{2}} - x^{-\frac{2}{3}})$

7. $a^{\frac{1}{4}}(a^{\frac{3}{2}} - a^{-\frac{1}{4}})$

8. $b^{\frac{2}{3}}(3b^{\frac{1}{4}} + b^{-\frac{2}{3}})$

9. $6c^{\frac{1}{8}}(c^{\frac{3}{4}} + 2c^{-\frac{1}{8}})$

10. $x^{\frac{1}{2}}(x^{-\frac{7}{2}} - x^{-\frac{1}{2}})$

<u>APPLYING QUESTION</u>

(a)   Multiply out and simplify $x^{\frac{1}{4}}(x^{\frac{1}{2}} + x^{-\frac{1}{4}})$

(b)   **Hence**, evaluate when $x = 16$