

8. Expand and simplify each expression.

a)  $(x + 3)(x - 5)(x + 4)$       b)  $(2x - 5)(x^2 - 3x - 6)$

9. Rationalise the denominators, leaving your answers in their simplest form:

a)  $\frac{5}{\sqrt{6}}$     b)  $\frac{3}{\sqrt{5}}$     c)  $\frac{6}{\sqrt{8}}$     d)  $\frac{4}{\sqrt{12}}$     e)  $\frac{8}{\sqrt{3}}$

10. Simplify each expression, leaving your answer with a positive index.

a)  $x^{-3} \times x^{-2} \times x$     b)  $\frac{3x^2 \times 6x^3}{9x^6}$     c)  $(a^{-2}b^4)^{-3}$

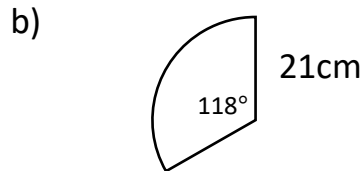
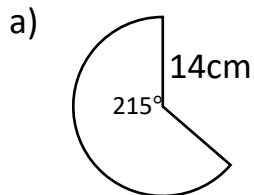
11. Express as a single fraction in its simplest form.

a)  $\frac{2}{3x} - \frac{3}{5x^2}$       b)  $\frac{6}{(x+3)} - \frac{2}{(x-5)}$

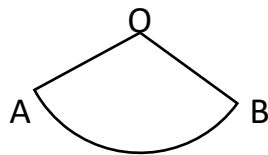
12. Fully factorise each of these expressions:

a)  $2x^2 - x - 3$     b)  $3x^2 - 75$       c)  $x^2 + 5x - 24$

13. Calculate the length of each arc in the diagrams below.



14. The sector shown below has a radius of 17cm an area of  $356\text{cm}^2$ .



Calculate angle AOB at the centre.