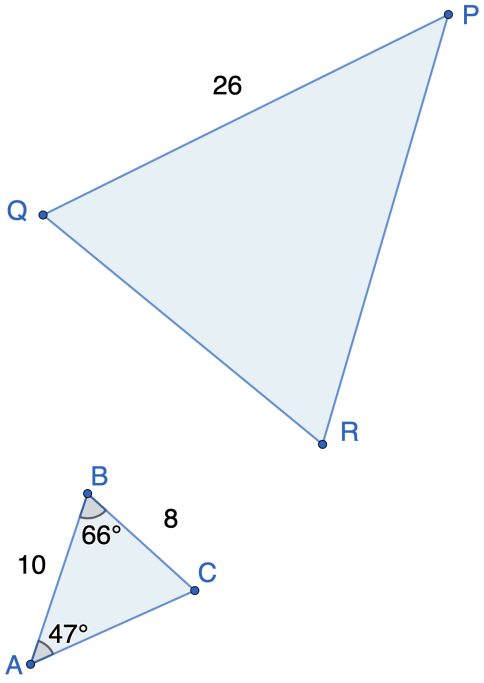
1. Simplify the expression with positive exponents only:

$$\frac{12x^5y^{-2}z^3}{4x^2y^3z^{-1}}$$

2. Factorise the following expressions:
   a. $9x^2 + 24x + 16$
   b. $25a^2 - 49b^2$
3. Simplify the following surds:
   a. $6\sqrt{72x^5y^3z^2}$
   b. $5\sqrt{3} + 2\sqrt{12} - \sqrt{27} + 4\sqrt{75}$
   c. $(3 + \sqrt{5})(2 - \sqrt{5})$
4. Solve the following quadratic equations.
   a. $2x^2 - 7x + 3 = 0$
   b. $x^2 - 6x + 2 = 0$

5. **In the given figure, triangle ABC is similar to triangle PQR.**



In triangle ABC, AB = 10 cm, BC = 8 cm, angle A = 47°, and angle B = 66°.

In triangle PQR, PQ = 26 cm.

Find:

a. angle R
b. the length of QR

6. A ladder leans against a wall and makes an angle of 68° with the ground. The foot of the ladder is 2.4 m from the wall. How high up the wall does the ladder reach?