

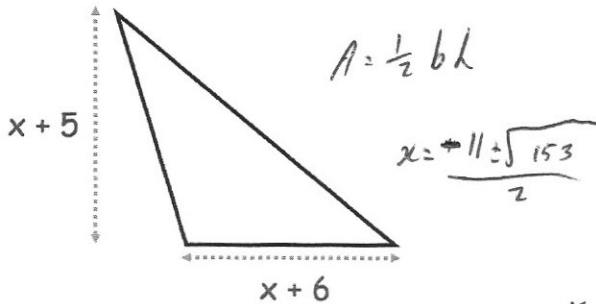


Bethan owns 10 shops and 5 restaurants. She is going to visit three of her businesses and writes her list in order. The order will be:

shop, restaurant, shop
or
restaurant, shop, restaurant

How many different lists can Bethan write?

$$\begin{aligned} SRS & 10 \times 5 \times 9 = 450 \\ RSR & 5 \times 10 \times 4 = 200 \\ & 650 \end{aligned}$$



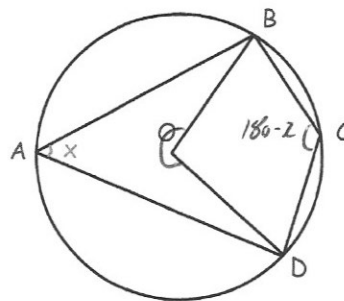
Shown is a triangle with area 19cm^2 . Find the value of x

$$\begin{aligned} \frac{1}{2}(x+6)(x+5) &= 19 \\ (x+6)(x+5) &= 38 \\ x^2 + 11x + 30 &= 38 \\ x^2 + 11x - 8 &= 0 \\ a=1 \quad b=11 \quad c=-8 & \\ x &= 0.6847\text{cm} \end{aligned}$$

$\angle BAD = x$

Express $\angle BCD$ in terms of x

$$180 - x$$



Express the reflex angle BOD in terms of x

$$\begin{aligned} 2(180 - x) \\ 360 - 2x \end{aligned}$$

Work out $2\sqrt{75} + 5\sqrt{27}$

$$\begin{aligned} 2 \times \sqrt{25 \times 3} + 5 \times \sqrt{9 \times 3} \\ 2 \times 5 \times \sqrt{3} + 5 \times 3 \times \sqrt{3} \\ 10\sqrt{3} + 15\sqrt{3} \end{aligned}$$

$$25\sqrt{3}$$