EXAMPLE 8 Express the following terms in the exponential form:

(i) $(2 \times 3)^5$ (ii) $(2a)^4$ (iii) $(-4m)^3$

SOLUTION

EXAMPLE 12 Simplify:

(i) $\dfrac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$

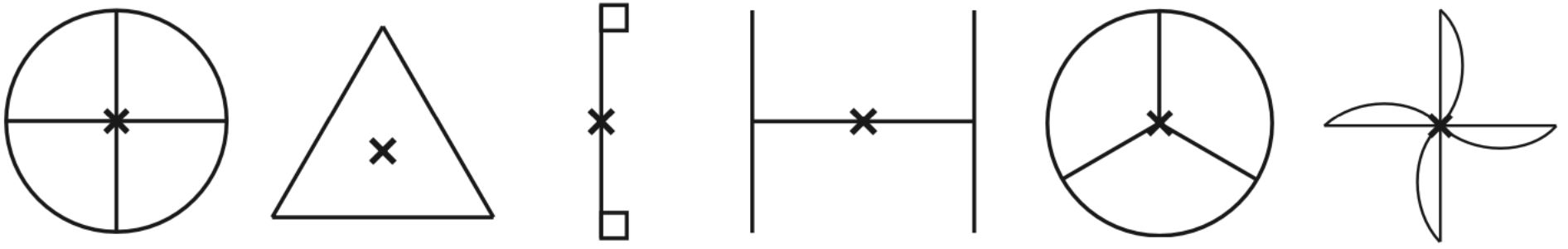
(ii) $2^3 \times a^3 \times 5a^4$

(xi) $\dfrac{4^5 \times a^8 b^3}{4^5 \times a^5 b^2}$

(xii) $\left(2^3 \times 2\right)^2$

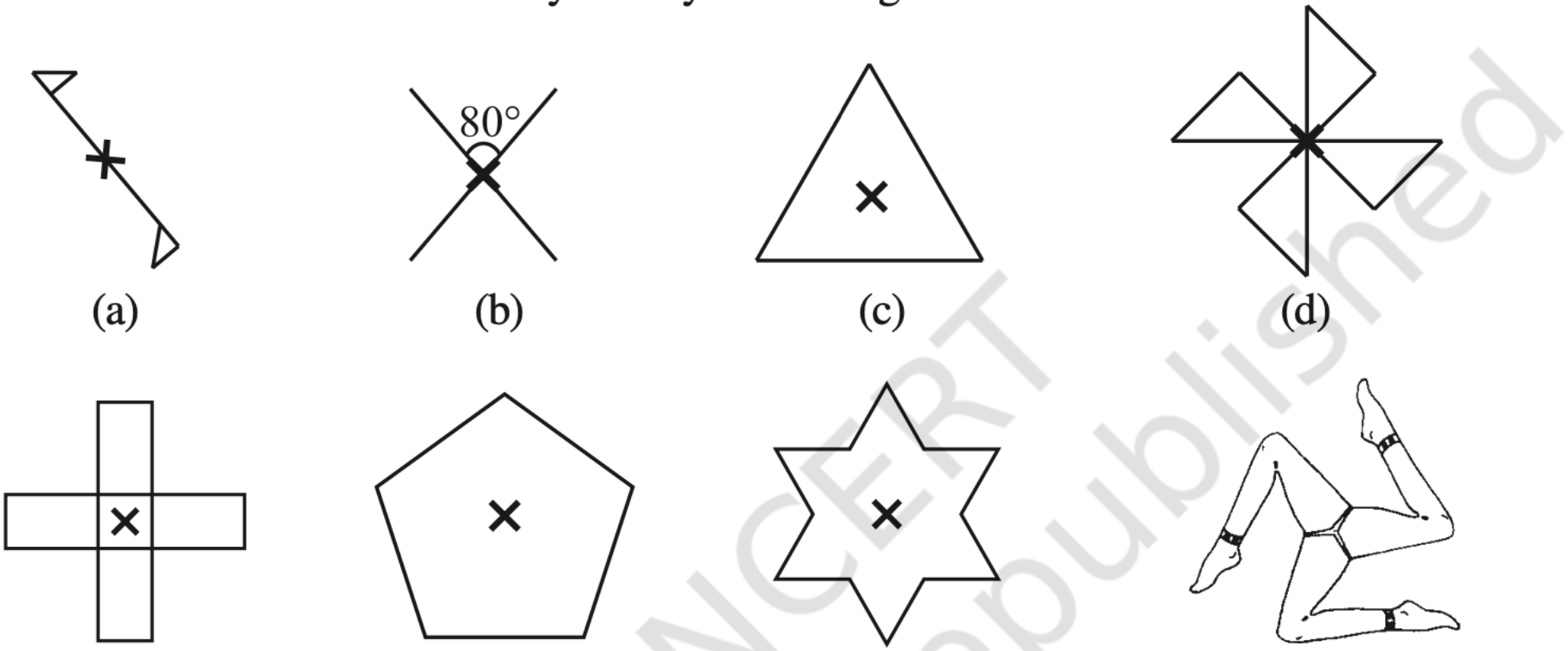
(h) 60,230,000,000,000,000,000,000 molecules are contained in a drop of water weighing 1.8 gm.

1. Which of the following figures have rotational symmetry of order more than 1:



(a) (b) (c) (d) (e) (f)

2. Give the order of rotational symmetry for each figure:



(a) (b) (c) (d)

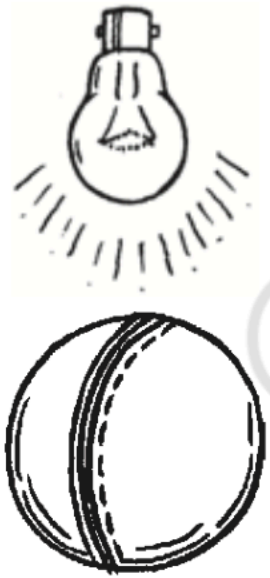
(e) (f) (g) (h)

6. After rotating by 60° about a centre, a figure looks exactly the same as its original position. At what other angles will this happen for the figure?

7. Can we have a rotational symmetry of order more than 1 whose angle of rotation is

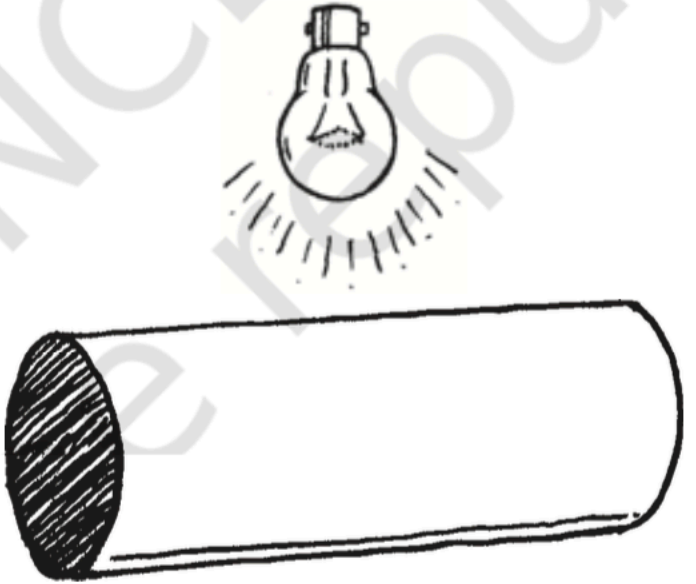
(i) 45°? (ii) 17°?

1. A bulb is kept burning just right above the following solids. Name the shape of the shadows obtained in each case. Attempt to give a rough sketch of the shadow. (You may try to experiment first and then answer these questions).



A ball

(i)



A cylindrical pipe

(ii)

A book

(iii)

10. From a circular card sheet of radius 14 cm, two circles of radius 3.5 cm and a rectangle of length 3 cm and breadth 1cm are removed. (as shown in the adjoining figure). Find the area of the remaining sheet. (Take $\pi = \frac{22}{7}$)

3. If the circumference of a circular sheet is 154 m, find its radius. Also find the area of the sheet. (Take $\pi = \frac{22}{7}$)