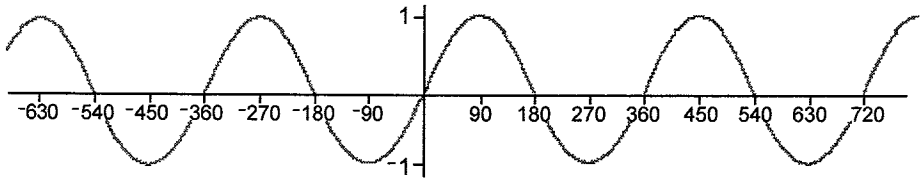
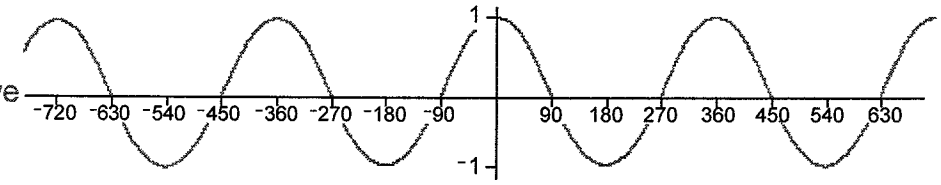
Trigonometry

(The general angle for sines and cosines)

The **sine** curve



The **cosine** curve



If sine **A** = sine x then $\mathbf{A}^\circ = 180n + (-1)^n x^\circ$

If cosine **A** = cosine x then $\mathbf{A}^\circ = 360n \pm x^\circ$

1. Give the **sine** values of each of these angles

60° 120° 420° 480° 780°

then write down the next two angles in the sequence.

2. Give the **cosine** values of each of these angles

50° 310° 410° 670° 770°

then write down the next two angles in the sequence.

3. Give the **sine** values of each of these angles

30° 150° 210° 330° 390° 510° 570°

then write down the next two angles in the sequence.

4. Give the **cosine** values of each of these angles

70° 110° 250° 290° 430° 470° 610°

then write down the next two angles in the sequence.

5. Give the **three** smallest possible **positive** angles having these **sine** values

(i) 1 (ii) 0.734 (iii) $^-0.212$

6. Give the **three** smallest possible **positive** angles having these **cosine** values

(i) 1 (ii) 0.406 (iii) $^-0.653$

7. Give the **first three** angles less than zero to have these **sine** values

(i) 0 (ii) 0.318 (iii) $^-0.741$

8. Give the **first three** angles less than zero to have these **cosine** values

(i) 0 (ii) 0.647 (iii) $^-0.358$

9. Estimate the smallest positive angle whose sine and cosine values are equal.

10. Using the estimate made in the previous question, list four positive and four negative angles whose

(i) positive values (ii) negative values

of the sine and cosine values for those angles are equal.