# Diwali maths activities for Class 9 and Class 10: Class 11

CBSE Math Revision · CBSE Class 11 (no calculator) · Student sheet

Name _____ Class _____ Date _____

No calculator. Every answer works out exactly.

## Starter (5 minutes)

1. Convert 135° to radians.

2. Find sin 30° + cos 60°.

3. How many 4-digit codes can be made from the digits 1 to 9 with no digit repeated?

4. Find 2 + 4 + 6 + ... + 40.

## Main activity (30 minutes)

### Task A: A rangoli circle

A circular rangoli has the equation $x^2 + y^2 - 6x - 8y = 0$ on a grid.

a. Find the centre of the circle.

b. Find its radius.

c. Show that the origin is on the circle, and find the other end of the diameter that starts at the origin.

### Task B: Festival lights

Lamps are lit over the five nights of the festival.

a. On night 1, 2 lamps are lit, and each night 3 times as many as the night before. How many are lit on night 5?

b. How many lamps are lit in total over the 5 nights?

c. A rangoli uses 3 different colours, one each for the border, the centre and the petals, chosen from 7 colours. In how many ways can this be done?

d. A group of 4 is chosen from 6 boys and 5 girls to draw the rangoli. In how many ways can the group have exactly 2 girls?

## Extension

1. Find the value of $\sin^2 30° + \cos^2 60° + \tan^2 45°$.