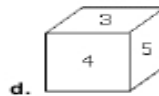
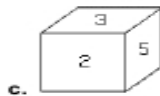
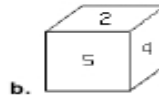
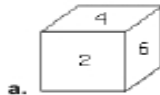


Answer the questions

- (1) From a tower on a straight road, the angles of depression of two cars at an instant are 45° and 60° . If the cars are 50 m apart, find the height of the tower.
- (2) Simplify $\frac{\cos^2\theta}{1-\tan\theta} + \frac{\sin^3\theta}{\sin\theta-\cos\theta}$
- (3) Find solution of quadratic equation $2a^2 + 4a - 16 = 0$
- (4) What is the probability that a leap year will contain 53 Tuesdays?
- (5) Simplify $1 - \frac{\sin^3\theta + \cos^3\theta}{\sin\theta + \cos\theta}$
- (6) The sum of the squares of two consecutive natural numbers is 145. Find the numbers.

Choose correct answer(s) from given choice

- (7) A die has numbers 1 to 6, such that sum of opposite faces are always 7. Which is the correct view of die ?



- (8) Simplify $\cos^6\theta + \sin^6\theta + 3\cos^2\theta\sin^2\theta$
- | | |
|-------------------------------|---------------------------|
| a. $\sin\theta + \cos\theta$ | b. 1 |
| c. $1 - \sin\theta\cos\theta$ | d. $\sin\theta\cos\theta$ |
- (9) Which of the following is the next two terms in the series
D, X, E, V, F, T, G, R, ____, ____
- | | |
|---------|---------|
| a. H, P | b. G, O |
| c. I, O | d. I, Q |