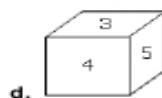
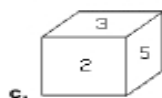
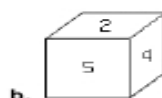
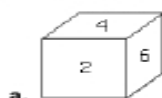


Answer the questions

- (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