

6

## TIME

- 2006B 16. (E) In the years from 2004 through 2020, Each Leap Day occurs  $3 \cdot 365 + 366 = 1461$  days after the preceding Leap Day. When 1461 is divided by 7 the remainder is 5. So the day of the week advances 5 days for each 4-year cycle. In the four cycles from 2004 to 2020, the Leap Day will advance 20 days. So Leap Day in 2020 will occur one day of the week earlier than in 2004, that is, on a Saturday.
- 2009B 19. **Answer (A):** The clock will display the incorrect time for the entire hours of 1, 10, 11, and 12. So the correct hour is displayed correctly  $\frac{2}{3}$  of the time. The minutes will not display correctly whenever either the tens digit or the ones digit is a 1, so the minutes that will not display correctly are 10, 11, 12, ..., 19, and 01, 21, 31, 41, and 51. This is 15 of the 60 possible minutes for a given hour. Hence the fraction of the day that the clock shows the correct time is  $\frac{2}{3} \cdot (1 - \frac{15}{60}) = \frac{2}{3} \cdot \frac{3}{4} = \frac{1}{2}$ .