

Answers: Mathematics of a standard clock

- 1. On a standard clock, the minute hand in moving from 12 to 30 minutes after 12, moves 6×30 minutes or 180 degrees. The hour hand moves $1/12$ as far, therefore only 15 degrees. $180 - 15 = 165$ degrees.**
- 2. The minute hand, in moving from 12 to 3, moves 90 degrees. The hour hand moves $1/12$ as far or 7.5 degrees. Therefore the angle is $90 - 7.5 = 82.5$ degrees**
- 3. Let N = the number of minutes after 12. Then $6N$ = the number of degrees the minute hand moves past 12 and $6N/12$ = the number of degrees the hour hand moves past 12. Therefore, the angle between the hands can be represented by: $6N - 6N/12 = 90$. Multiplying by 12 yields $72N - 6N = 1080$ and $66N = 1080$. N therefore is 16 and $4/11$ minutes past 12.**