**46** You are given the Universal set of all natural numbers up through 30. Suppose $M$ is the set of all multiples of 5 and $N$ includes all even numbers between 11 and 21. For which of the following sets does ALL its elements belong to neither $M$ nor $N$?

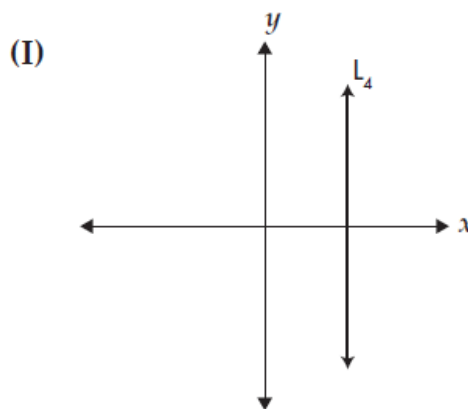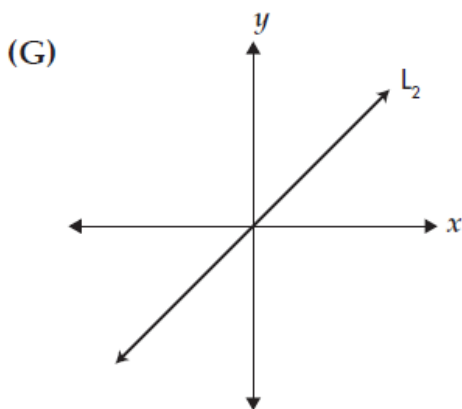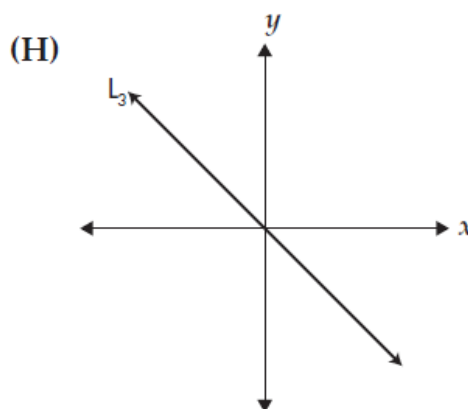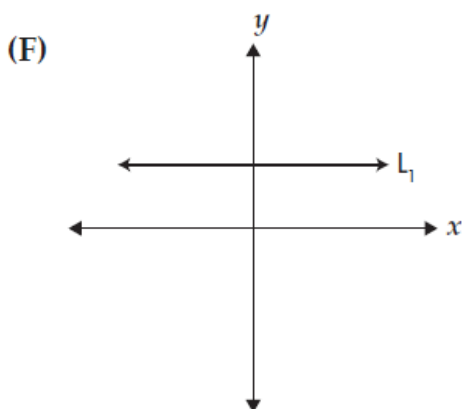(F) {15, 19, 21, 24, 26}

(G) {6, 8, 11, 22, 27}

(H) {10, 16, 20, 25, 30}

(I) {2, 5, 14, 17, 29}

**47** What is the slope of a line that is perpendicular to the line that contains the points (5, 4) and (–7, 9)?

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |

**48** Which of the following represents the graph of a line with an undefined slope?



(F)



(H)



(G)



(I)

# Answers

**46** (G)

$U = \{1, 2, 3, 4, \ldots, 29, 30\}$, $M = \{5, 10, 15, 20, 25, 30\}$, and $N = \{12, 14, 16, 18, 20\}$. The set in choice (G) contains none of the elements of $M$ or $N$. For the set in choice (F), the number 15 is an element of set $M$. For the set in choice (H), all its elements belong to either set $M$ or set $N$. For the set in choice (I), the number 5 is an element of $M$ and the number 14 is an element of $N$.

**47** The correct answer is 2.4. The slope of the given line is $\dfrac{9-4}{-7-5} = -\dfrac{5}{12}$. The slope of a perpendicular line must be the negative reciprocal of $-\dfrac{5}{12}$, which is $\dfrac{12}{5} = 2.4$

**48** (I)

A line with an undefined slope must be vertical. Its general formula is $x = k$, in which $k$ is a constant.