21 What is the solution for x in the inequality $-3x + 4 < 16$?

(A) $x < -\frac{20}{3}$

(B) $x > -4$

(C) $x < -\frac{20}{3}$

(D) $x < -4$

22 What are the coordinates of the y-intercept of the line that is represented by the equation $6x - 5y = 30$?

(F) (0, –6)

(G) (0, –5)

(H) (5, 0)

(I) 6, 0)

23 What is the value of x in the equation $5(2x - 3) + 2(7x + 2) = 37$?

(A) 2

(B) 3

(C) 4

(D) 5

24 A health club charges \$150 per month for each member, plus an hourly rate of \$5 for the use of the club's facilities. The function shown below can be used to determine the cost in dollars per month for the use of this health club's facilities.

$f(h) = 150 + 5h$.

Janine used the club's facilities in October, November, and December. If she paid \$300 in October, \$380 in November, and \$330 in December, how many total hours did she spend at the club during these three months?

25 What is the slope of the line that contains the points (–2, –7) and (–6, 4)?

Answers

21 **(B)**

Subtract 4 from each side to get $-3x < 12$. The final step is to divide each side by -3. When dividing (or multiplying) an inequality by a negative number, the inequality symbol must be reversed. This means that $<$ must change to $>$. So, $\frac{-3x}{-3} > \frac{12}{-3}$, which simplifies to $x > -4$.

22 **(F)**

The y-intercept is found by setting x equal to 0, then solving for y. Then $(6)(0) - 5y = 30$, which becomes $-5y = 30$. Dividing each side by -5 leads to $y = -6$. Therefore, the y-intercept is represented by $(0, -6)$.

23 **(A)**

Using the Distributive Law of Addition over Multiplication, we get $10x - 15 + 14x + 4 = 37$. Combining like terms on the left side leads to $24x - 11 = 37$. Add 11 to each side to get $24x = 48$. Finally, divide each side by 24 to get the answer of $x = 2$.

24 The correct answer is 112. For October, the number of hours is found by solving the equation $300 = 150 + 5h$. Then $150 = 5h$, so $h = 30$. Similarly, the number of hours for November and December are found by solving the equations $380 = 150 + 5h$ and $330 = 150 + 5h$, respectively. For the equation $380 = 150 + 5h$, we can simplify it to $230 = 5h$, so $h = 46$. Also, the equation $330 = 150 + 5h$ can be simplified to $180 = 5h$, which means that $h = 36$. Thus, the total number of hours is $30 + 46 + 36 = 112$.

25 The correct answer is -2.75. The slope is $\frac{4-(-7)}{-6-(-2)} = \frac{11}{-4} = -2.75$.