

38 What is the solution for the inequality $|-5x + 2| < 7$?

(F) $-1 < x < \frac{9}{5}$

(G) $-\frac{9}{5} < x < -1$

(H) $1 < x < \frac{9}{5}$

(I) $-\frac{9}{5} < x < 1$

39 What is the y value of the y -intercept of the line that contains the points $(-8, -5)$ and $(10, 67)$?

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40 How many pounds of peanuts worth \$0.60 per pound should be mixed with 27 pounds of cashews worth \$0.90 per pound to create a 45-pound mixture worth \$0.78 per pound?

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41 Which of the following is a factor of $2x^2 + 9x - 35$?

(A) $2x + 5$

(B) $2x - 7$

(C) $x - 5$

(D) $x + 7$

Answers

38 (F)

The inequality $|-5x + 2| < 7$ is equivalent to $-7 < -5x + 2 < 7$. Subtract 2 from each part to get $-9 < -5x < 5$. Now divide each part by -5 . But you must remember to change the direction of the inequality signs. Thus, $\frac{-9}{-5} > x > \frac{5}{-5}$, which can be written in simpler form as $-1 < x < \frac{9}{5}$.

39 The correct answer is 27. The slope of the line is $\frac{67 - (-5)}{10 - (-8)} = \frac{72}{18} = 4$. Then $y = 4x + b$, where b is the y -intercept. Substituting $(10, 67)$ into this equation, we get $67 = 4(10) + b$. Thus, $b = 67 - 40 = 27$.

40 The correct answer is 18. Let x represent the number of pounds of peanuts. The value of the peanuts is $\$0.60x$ and the value of the cashews is $(27)(\$0.90) = \24.30 . Since the total value of both types of nuts is $(45)(\$0.78) = \35.10 , our equation becomes $0.60x + 24.30 = 35.10$. Subtract 24.30 from each side to get $0.60x = 10.80$. Thus, $x = \frac{10.80}{0.60} = 18$.

41 (D)

The initial stage of this trial-and-error factoring would appear as follows: $(2x \quad)(x \quad)$. We must fill in each blank with a number and a correct sign so that the cross-product yields $+9x$ and the end product yields -35 . The correct combination is $(2x - 5)(x + 7)$. Note that the cross-product is $(2x)(7) - (5)(x) = +9x$ and the end-product is $(-5)(7) = -35$.