

- 32** Nicky has a total of 89 coins in nickels, dimes, and quarters. He has 8 more dimes than nickels and two and one half times as many quarters as nickels. In dollars and cents, what is the total value of these coins?

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- 33** What is the value of x in the following proportion? $\frac{7}{x-5} = \frac{15}{x+4}$.

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For #34, 35, George is training for a marathon. The following chart shows his time (in hours) and distance run (in miles) for each of four days.

| Day | Monday | Tuesday | Wednesday | Thursday |
|----------|--------|---------|-----------|----------|
| Time | 1.5 | 2 | 3.5 | 0.6 |
| Distance | 12 | 15 | 26 | 5 |

- 34** On which day did George have the highest average speed?
- (F) Monday
(G) Tuesday
(H) Wednesday
(I) Thursday
- 35** On Monday, George was not tired after completing his distance of 12 miles. If he had run an additional 3 miles at 9 miles per hour, which of the following equations would be the BEST representation of his distance in miles (Y) and his time in hours (X)?
- (A) $Y = 8.06X$
(B) $Y = 8.18X$
(C) $Y = 8.25X$
(D) $Y = 8.33X$

Answers

32 The correct answer is 14.75. Let n represent the number of nickels, $n + 8$ represent the number of dimes, and $2.5n$ represent the number of quarters. Then $n + (n + 8) + 2.5n = 89$. This equation simplifies to $4.5n + 8 = 89$. So $4.5n = 81$, which leads to $n = 18$ (number of nickels). This means that the number of dimes is 26 and the number of quarters is 45. The total value is $(18)(\$0.05) + (26)(\$0.10) + (45)(\$0.25) = \14.75 .

33 The correct answer is 12.875. Cross-multiply to get $(7)(x + 4) = (15)(x - 5)$, which becomes $7x + 28 = 15x - 75$. Subtract $7x$ from each side to get $28 = 8x - 75$. Adding 75 to each side leads to $103 = 8x$. Thus, $x = 12.875$.

34 (I)

The average speed is found by dividing the distance by the time. For Thursday, the average speed was $\frac{5}{0.6} \approx 8.33$ miles per hour. This rate exceeded that of any other day. (His speed in miles per hour for Monday, Tuesday, and Wednesday was 8.0, 7.5, and 7.43, respectively.)

35 (B)

By running an extra 3 miles, his total distance would have been 15 miles. His additional time would have been $\frac{3}{9} \approx 0.333$ hours. His total time would have been $1.5 + 0.333 \approx 1.833$ hours. Thus, his average speed would have been $\frac{15}{1.833} \approx 8.18$ miles per hour. Therefore, $Y = 8.18X$ is the best equation.