

Algebra Jumble

1. _____ During his morning commute to work in rush hour traffic, Justin's average speed was 30 mi/h. During his afternoon commute back home along the same route, his average speed was 60 mi/h. What was his average speed for the entire round trip?
2. _____ The average of A and $3B$ is 7, the average of A and $3C$ is 8, and the average of A and $3D$ is 9. What is the average of A, B, C and D ?
3. _____ Seven consecutive positive integers have a sum of 91. What is the largest of these integers?
4. _____ A piggy bank contains a certain number of coins, of which 53 are dimes and 19 are nickels. The remainder of the coins in the bank are quarters. If the probability of randomly selecting a quarter from the bank is $\frac{1}{4}$, how many quarters does the bank contain?
5. _____ A cruise ship must average 22 mi/h for 10 hours to make its next port on schedule. During the first 4 hours, bad weather caused it to reduce its speed to 16 mi/h. What should its speed be for the remainder of the trip to make it to the next port on schedule?
6. _____ An audience of 450 people is seated in an auditorium. Each row contains the same number of seats and each seat in the auditorium is occupied. With three fewer seats per row, and five extra rows, the same audience could still be seated, occupying all seats. How many rows does the auditorium have?
7. _____ If $f(x) = 5x - 3$, $g(x) = 3x^2 + 1$ and $h(x) = f(x) + g(x)$, what is the sum of the x -values for which $h(x) = 0$? Express your answer as a common fraction.
8. _____ When $x^2 - 5x + 3c$ is divided by $x - 3$ the remainder is -12 . What is the value of c ?