

Problems of the Week # 9

Name: _____

Date: _____

Circle the one best answer. Justify your answer by showing all work below.

41. Solve: $\frac{8}{x+5} - \frac{3}{x-5} = \frac{15}{x^2-25}$

- A. -14 B. -5 C. 8 D. 14 E. 70

42. The mathematical model of the relationship between time and the remaining number of kilobytes to be downloaded from a web site is $n = -3.2t + 450$, where n is the number of kilobytes remaining to be downloaded at time t in seconds. From the numbers below, select the amount of time nearest to when 100 kilobytes remain to be downloaded.

- A. 130 sec B. 770 sec C. 172 sec D. 110 sec E. 109 sec

43. If $P \times 10^m$ is multiplied by $Q \times 10^n$, the product is equivalent to which of the following?

- A. $(P + Q) \times 10^{m+n}$ B. $PQ \times 10^{m+n}$ C. $PQ \times 10^{mn}$
D. $PQ \times 100^{m+n}$ E. $PQ \times n + m$

44. If a square carpet, 8 feet long on a side, is cut up into smaller squares each 2 feet long on a side, what is the largest number of smaller squares that can be formed?

- A. 8 B. 16 C. 32 D. 64 E. 128

45. How long is the hypotenuse of a right triangle whose legs measure $3x$ and $4x$ units?

- A. $x\sqrt{7}$ B. $25x$ C. $5x$ D. $7|x|$ E. cannot be determined