Problems of the Week # 2

Name:_____ Date:_____

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

6. Solve this system: $\begin{cases} 3x-5y=-12 \\ 6x+8y=-24 \end{cases}$ The $x-$ value of the solution is:

A. 4 B. 2 C. 0 D. -1 E. -4

7. When buying an item at a sporting goods store, the company advertises that products will be 10% higher than those purchased on their website. If you buy an item in their store for $385, what would it cost had you bought it on their website?

A. $38.50 B. $346.50 C. $350.00 D. $388.89 E. $423.50

8. Solve the equation $7^{5x} \cdot 7^{-3} = 1$ for x.

A. $\frac{4}{5}$ B. $\frac{1}{49}$ C. $\frac{3}{5}$ D. 1 E. 49

9. A tire has a circumference of 30 inches. How many revolutions does it make as it rolls 33 feet?

A. 1.1 B. $\frac{15}{\pi}$ C. 13.2 D. 15π E. 82.5

10. Given right ΔABC with $\angle C = 90^\circ$, $\angle A = 50^\circ$, $AC = 5$, $BC = x$, and $AB = y$.
Which equation expresses a correct trigonometric ratio for the given triangle?

A. $\cos 50^\circ = \frac{y}{5}$ B. $\sin 50^\circ = \frac{x}{y}$ C. $\tan 40^\circ = \frac{x}{5}$

D. $\cos 40^\circ = \frac{5}{y}$ E. $\tan 50^\circ = \frac{5}{x}$