PRACTICE DRILL 22—TRANSLATING AND SOLVING PERCENT QUESTIONS (MIDDLE AND UPPER LEVELS ONLY)

1. 30 is what percent of 250?

2. What is 12% of 200?

3. What is 25% of 10% of 200?

4. 75% of 20% of what number is 12?

5. 16% of what number is 25% of 80?

6. What percent is equal to $\frac{3}{5}$?

7. 30 is what percent of 75?

8. What is 11% of 24?

9. What percent of 24 is equal to 48?

10. 60% of what percent of 500 is equal to 6?

Practice Drill 22—Translating and Solving Percent Questions

1.　　12

Translation: $30 = \dfrac{x}{100} \times 250$. To solve, simplify the right side: $\dfrac{x \times 250}{100} = \dfrac{250x}{100}$, which reduces to $\dfrac{25x}{10}$. Multiply both sides by 10, and then divide both sides by 25. Check your work by plugging in 12 for x.

2.　　24

Translation: $x = \dfrac{12}{100} \times 200$. To solve: $\dfrac{12 \times 200}{100} = \dfrac{2400}{100} = 24$.

3.　　5

Translation: $x = \dfrac{25}{100} \times \dfrac{10}{100} \times 200$. To solve, reduce the right side: $\dfrac{1}{4} \times \dfrac{1}{10} \times 200$. Then simplify: $\dfrac{1 \times 1 \times 200}{4 \times 10} = \dfrac{200}{40} = 5$.

4.　　80

Translation: $\dfrac{75}{100} \times \dfrac{20}{100} \times n = 12$. To solve, reduce the left side: $\dfrac{3}{4} \times \dfrac{1}{5} \times n$. Then simplify: $\dfrac{3 \times 1 \times n}{4 \times 5} = \dfrac{3n}{20}$. Multiply both sides by 20, and divide both sides by 3. Check your work by plugging in 80 in for n.

5.　　125

Translation: $\dfrac{16}{100} \times n = \dfrac{25}{100} \times 80$. To solve, reduce both sides to get $\dfrac{4}{25} \times n = \dfrac{1}{4} \times 80$. Then, multiply to get $\dfrac{4n}{25} = \dfrac{80}{4}$. Next, cross-multiply to get $16n = 2,000$. Finally, divide both sides by 16. Check your work by plugging in 125 for n.

6.　　60

Translation: $\dfrac{x}{100} = \dfrac{3}{5}$. To solve, cross-multiply to get $5x = 300$, and then divide both sides by 5. Check your work by plugging in 60 for x.

7.　　40

Translation: $30 = \dfrac{x}{100} \times 75$. To solve, simplify the right side: $\dfrac{x(75)}{100} = \dfrac{75x}{100}$, which reduces to $\dfrac{3x}{4}$. Multiply both sides by 4, and divide both sides by 3. Check your work by plugging in 40 for x.

8.   2.64 or $2\dfrac{16}{25}$ or $\dfrac{66}{25}$

Translation: $x = \dfrac{11}{100} \times 24$. To solve, $\dfrac{11}{100} \times 24 = \dfrac{11 \times 24}{100} = \dfrac{264}{100} = 2.64$.

9.   200

Translation: $\dfrac{x}{100} \times 24 = 48$. To solve, simplify the left side: $\dfrac{24x}{100}$, which reduces to $\dfrac{6x}{25}$.

Then multiply both sides by 25, and divide both sides by 6. Check your work by plugging in 200 for x.

10.   2

Translation: $\dfrac{60}{100} \times \dfrac{n}{100} \times 500 = 6$. To solve, reduce the fraction to $\dfrac{3}{5}$ and simply the left side: $\dfrac{3 \times n \times 500}{5 \times 100} = \dfrac{1500n}{500} = 3n$.

Then divide both sides by 3. Check your work by plugging in 2 for n.