Part I *Write the letter for the correct answer in the blank at the right of each question.*

1. Simplify $(n^4)(n^6)(r^2)(r^7)$.

2. Simplify $(-2w^3r^2)^3(5w^4r^3)^2$.

Simplify. Assume the denominator is not equal to zero.

3. $\frac{m^2n^6}{m^5n^4}$

4. $\frac{(z^{-2}w^3)^2}{(z^2w^4)^3}$

5. Solve $4^{2x-3} = 256$.

6. Express 0.000056 in scientific notation.

$\frac{x^a}{x^b} = x^{a-b}$

$(-8w^9r^6)(25w^8r^6)$

$m^{2-5}n^{6-4}$

$\frac{m^{-3}n^2}{1}$

$\frac{z^{-4}w^6}{z^6w^{12}}$

$z^{-4-6}w^{6-12}$

$z^{-10}w^{-6}$

$\frac{z^{-10}w^{-6}}{1}$

1. $n^{10}r^9$

2. $200w^{17}r^{12}$

3. $\frac{n^2}{m^3}$

4. $\frac{1}{z^{10}w^6}$

5. _____

6. _____

5. Solve $4^{2x-3} = 256$.

$4^{2x-3} = 4^4$

$2x - 3 = 4$

$+3 \quad +3$

$2x = 7$

256

16×16

$4 \cdot 4 \quad 4 \cdot 4$

$2 \cdot 2 \quad 2 \cdot 2 \quad 2 \cdot 2 \quad 2 \cdot 2$

NO!

16^2 ?

2^8 ?

YES!

4^4

$x = \frac{7}{2}$

4. _____

5. _____

7. Evaluate $\frac{5.12 \times 10^6}{2.4 \times 10^{-3}}$.

$\left(\frac{5.12}{2.4}\right)\left(\frac{10^6}{10^{-3}}\right)$

$6-(-3)$

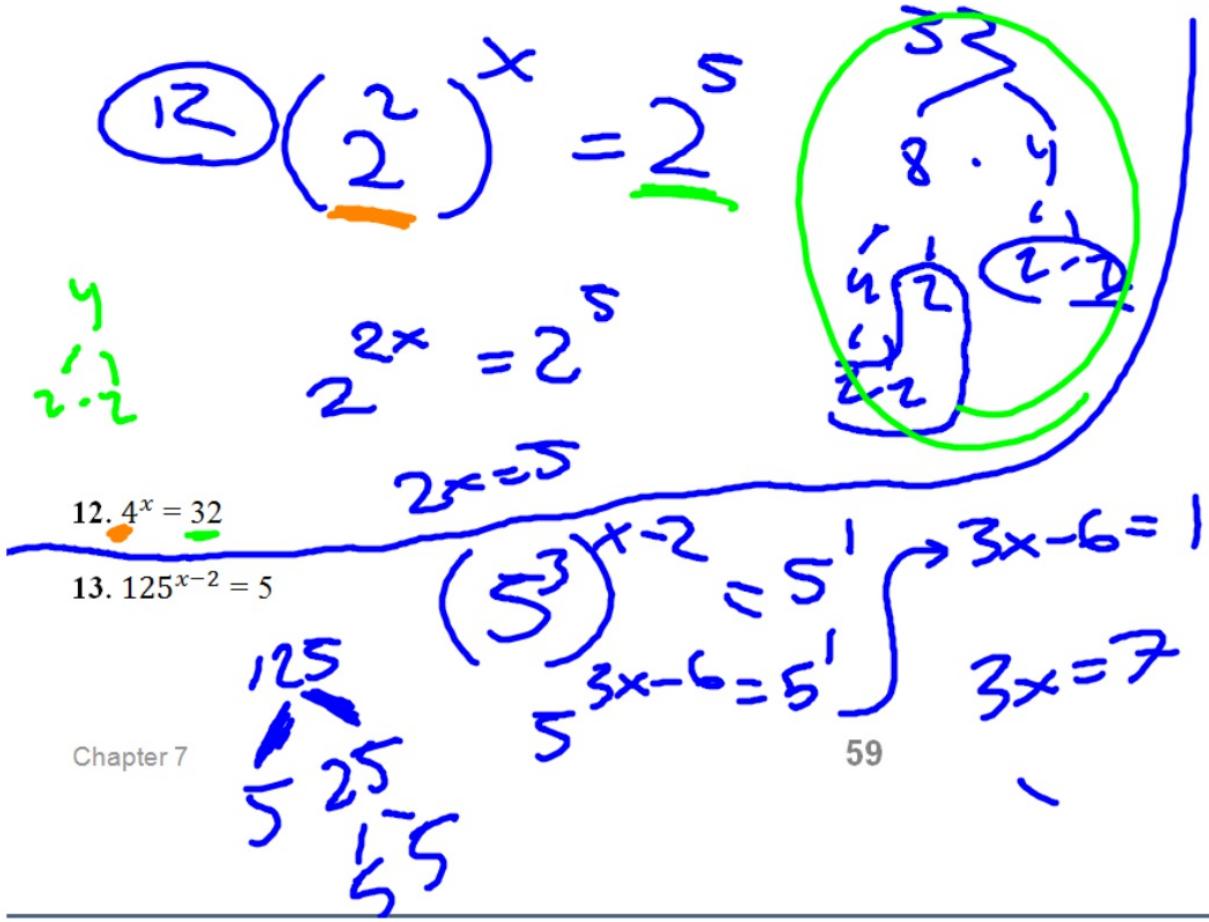
$2.1\overline{3} \times 10^9$

7. _____

Solve each equation.

12. $4^x = 32$

13. $125^{x-2} = 5$

12. _____

13. _____