Name _____

Directions: Complete each question. SAWGAP

1. Which is equivalent to $2^7 \cdot 2^{-5}$?

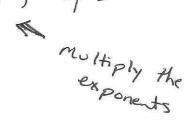   (A) 2^2 B. 2^{12}

   C. 2^{-2} D. 2^{-35}

   — Keep the base "add" the exponents

   7^3

2. Which exponential expression is equal to $7^{-5} \cdot 7^8$?

   (A) $\dfrac{7^2}{7^{-1}}$ $2 - ^-1 = 3$ B. $(7^3)^{-1}$ 7^{-3}

   Keep the base "subtract" the exponents

   C. $\dfrac{7^{-2}}{7^{-1}}$ $-2 - ^-1 = -1$ D. $(7^{-1})^3$ 7^{-3}

   multiply the exponents

3. Solve the following

   $$(2x^3)^4$$

   $2^4 \cdot x^{12}$

   $16 \cdot x^{12}$

   $16x^{12}$

4. Which expression is equivalent to $(4.5 \times 10^2) + (6.0 \times 10^3)$ and written in scientific notation?

   450   6000

   A. 1.05×10^6

   B. 2.7×10^6 6450

   (C) 6.45×10^3 6.45×10^3

   D. 10.5×10^5

5. What is the value of x in the equation $2(x-4) = 4(2x+1)$?

A. -2

B. 2

C. $-\frac{1}{2}$

D. $\frac{1}{2}$

$$2x - 8 = 8x + 4$$
$$-2x \qquad -2x$$
$$-8 = 6x + 4$$
$$-4 \qquad -4$$
$$\frac{-12}{6} = \frac{6x}{6}$$
$$-2 = x$$

6. What is the value of x in the equation $\frac{3}{4}x + 2 = \frac{5}{4}x - 6$?

A. -16

B. 16

C. -4

D. 4

$$-\frac{3}{4}x \qquad -\frac{3}{4}x$$

$$2 = \frac{2}{4}x - 6$$
$$+6 \qquad +6$$

Keep in mind $\frac{2}{4} = \frac{1}{2}$

$$\frac{8}{\frac{1}{2}} = \frac{\frac{1}{2}x}{\frac{1}{2}} \qquad \text{or} \qquad 2 \cdot 8 = \frac{1}{2}x \cdot 2$$
$$16 = x \qquad\qquad 16 = x$$

7. Winston needs at least 80 signatures from students in his school before he can run for class president. He has 23 signatures already. He and two of his friends plan to get the remaining signatures during lunch. If each person gets the same number of signatures, which inequality can Winston use to determine the minimum number of signatures each person should get so he can run for class president?

A. $3x + 80 \geq 23$

B. $3x + 80 \leq 23$

C. $3x + 23 \geq 80$

D. $3x + 23 \leq 80$