Key

Simplify the following by removing the parentheses, brackets, and braces as necessary: (3 pts. each)

1) $-(5a)=$ $\boxed{-5a}$

2) $(x+z)=$ $\boxed{x+z}$

3) $-(9a-7b+24)=$ $\boxed{-9a+7b-24}$

4) $-(n-1)=$ $\boxed{-n+1}$

5) $(2x+y)-6=$ $\boxed{2x+y-6}$

6) $-\{7-[9-(7+8)]\}=$ $\boxed{-13}$

7) $3(4x+5)-[(12x+10)+5]=$ $\boxed{0}$

8) $[5(x+2)-3x]=$ $\boxed{2x+10}$

9) $\{4[3(y-2)-4(y+2)]-3\}=$ $\boxed{-4y-59}$

10) $[5(x+2)-3x]-\{4[3(y-2)-4(y+2)]-3\}=$ $\boxed{2x+4y+69}$

Key

Fill in the blanks:
(3 pts. per question)

11) 62.4 is ***20*** % of 312.

12) 108 is ***27*** % of 400.

13) 37 is to 111, as, 17 is to ***51***.

14) 535.5 is to 714, as, 75 is to ***100***.

15) 1 foot (12 inches) is to 1 inch, as, 1.0000 feet is to ***0.0833*** feet, which is the decimal equivalent of 1 inch.

Word problem 1: (5 pts.)

16) A blueprint of a shopping mall is in the scale of 1" = 80'. One part of the mall is to be 220 feet long. How long will this be on the blueprint in inches?

$$\frac{1}{80} = \frac{x}{220}$$

x = ***2.75 inches***

Key

Perform each of the indicated operations:
(4 pts. each)

17) $\left(\frac{2}{3}\right)\left(\frac{3}{4}\right) =$ $\boxed{\frac{1}{2}} = \boxed{0.5000}$

18) $\left(\frac{7}{5}\right) + \left(\frac{13}{-5}\right) =$ $\boxed{-\frac{6}{5}} = \boxed{-1.2000}$

19) $t^4 \cdot t^3 \cdot t^2 =$ $\boxed{t^9}$

20) $r^6 \div r^9 =$ $\boxed{r^{-3}} = \boxed{\frac{1}{r^3}}$

21) $\left(-x^4\right)^2 =$ $\boxed{+x^8}$

22) $\left(y^3\right)\left(1/y^3\right) =$ $\boxed{1}$

23) $2x[3 + 4(-x - y)] =$ $\boxed{-8x^2 + 6x - 8xy}$

24) $4(3x + 4) + \{-2[2(3x + 3)] - 4\} =$ $\boxed{0}$

Key

Fill in the blanks in the following:
(3 pts. per question)

25) 0.5833 feet = ***7*** inches.

26) An equation is a statement of ***equality*** between algebraic expressions. Because of this we are able to utilize the properties of simplification and transposition.

27) The sum of five consecutive odd numbers equals 15. The numbers are ***-1***, ***1***, ***3***, ***5*** and ***7***.

28) If 28 equals 16% of a given number, then 49 will equal ***28***% of that same number.

Word problem 2:
(6 pts.)

29) A class contained a total of 12 ladies and 16 gentlemen, or a ratio of 3:4 – ladies to gentlemen. How many gentlemen would have to join the class to make the ratio 2:3 – ladies to gentlemen?

$$\frac{12}{16+x} = \frac{2}{3}$$

x = ***2 more gentlemen***