Please provide sufficient details about how you solved the problem. More difficult problems are marked with a $*$. If unable to solve a problem, please present your thoughts and any partial solution.

1. Compute the following sums/differences:

   (a) $-7 + (-14)$

   (b) $-54 - (-20)$

   (c) $-(-99 + (-1))$

   (d) $(-10) + (-11) + (-12)$

   (e) $-15 - (13 - (-7))$

2. Compute the following products:

   (a) $(-7) \times 6$

   (b) $(-8) \times (-9)$

   (c) $(-5) \times (6) \times (-10)$

   (d) $(-1) \times (-2) \times (-3) \times (-4) \times (-5)$

   (e) $2 \times 2 \times 2 \times 2 \times 2$

   (f) $(-2) \times (-2) \times (-2) \times (-2) \times (-2)$

3. Compute the following expressions (utilize the properties of addition and multiplication):

   (a) $73 \times 2 + 73 \times 8$

   (b) $150 \times (-2) + (-150) \times (18)$

   (c) $1846 \times 99 - (-1846)$

   (d) $1569 \times 87 - 569 \times 87$

4. Simplify the following algebraic expressions:

   (a) 3 (2x-1)

   (b) 2 + (1-x)

   (c) 7x - (3x+15)

   (d) 3 (2x-1) + x

5. The population of a certain species of insects is x now. It becomes y times itself after each week. What will be its population after 3 weeks?

6. The volume of a rectangular cuboid is the product of its length, width and height. The length of a cuboid is 3 times its width, and its height is one half its length. If its width is w cm, find its volume.

7. An orange costs 2 cents more than an apple. A grapefruit costs as much as 3 oranges. A fruit basket consists of 10 apples, 5 oranges and a grapefruit.

   (a) Write expressions for the price of each fruit, denoting the price of an apple by the letter a.

   (b) If the fruit basket costs $1.96, how much does each fruit cost?

8.* (a) Show that $(a + 1)(a - 1) = a^2 - 1$.

   (b) Without using a calculator, compute 1999×2001