ALGEBRAIC EXPRESSIONS QUIZ REVIEW Answer Key

1. **Write the following expressions using numbers, symbols and letters**

   a) Four times the difference of a number and 7 $4(n-7)$

   b) The product of 12 and a number, decreased by three $12n-3$
   c) The sum of three times a number and 8 $3n+8$
   d) The sum of seven and a number then multiplied by seven $7(7+n)$
   e) A number multiplied by seven then decreased by 7 $7n-7$
   f) Twice the difference of a number and 9, and the result increased by 4 $2(n-9)+4$
   g) The product of a number and the difference of the number and six $n(n-6)$
   h) The sum of half a number and 10 $\frac{1}{2}n+10$ or $n \div 2 + 10$

2. Write the following expressions using words:
   a) $4n \div 3$ The product of 4 and a number divided by three
   b) $3(p+2)$ 3 times the sum of a number and 2
   c) $45/3n$ 45 divided by three times a number
   d) $5+4(n+6)$ 5 plus 4 times the sum of a number and 6

3. **Write an algebraic expression for each situation to find the cost.**

   a) You make $10 an hour working at the CNE as a game host. 10h where h represents the number of hours worked

   b) The bus fare for each student is $5 plus a one-time fee of $50 $5s + 50$ where s represents the number of students

   c) It costs $2 per visit at the gym if you paid a $30 membership fee $2v + 30$ where v represents the number of visits

4. **Evaluate the following statements if a = 2, b = 3, and c = 5. Show all your steps**

   a) $2a + 3c \div 5$, when $a=2$; $c=5$

   $2(2)+3(5)\div 5$
   $= 4 + 3(5) \div 5$
   $= 4 + 15 \div 5$
   $= 4 + 3$
   $= 7$

   b) $3(c-a)+a$, when $a=2$; $c=5$

   $3(5)-(2)+(2)$
   $= 3(3)+2$
   $= 9+2$
   $= 11$

   c) $3c + ab$, when $a=2$, $b=3$; $c=5$

   $3(5)+(2)(3)$
   $= 15+(2)(3)$
   $= 15+6$
   $= 21$

   d) $5/c + ac + a^2$, when $a=2$; $c=5$

   $5 \div (5)+(2)(5)+(2)^2$
   $5 \div 5 + (2)(5)+4$
   $= 1+(2)(5)+4$
   $= 1+10+4$
   $= 11+4$
   $= 15$

5. Paul works at a hamburger stand. He earns $15 pay per day plus $2 for every combo he sells.
   a. Write an algebraic expression for how much money Paul earns in a day
   b. Use your expression to figure out how much money Paul will make if he sells 25 combos in a day?
   c. What if he only sells 5 combos?

   See next page

6. Erin has a balance of $182.73 in her savings account. She makes a deposit of $12.50 in her account each week.
   a. Write an algebraic expression that represents the amount of money in Erin's savings account after *n* weeks.
   b. Calculate how much money Erin will have in her account after eight weeks.

   See next page

5.a) Let c represent the number of combos Paul sells

$2c + 15$

b) If Paul sells 25 combos

$2c + 15$, when $c = 25$

$2(25) + 15$

$= 50 + 15$

$= \$65$

Paul will earn $65, if sells 25 combos and gets $2 for every combo he sells plus earns $15 per day.

c) 5 combos only

$2c + 15$, when $c = 5$

$2(5) + 15$

$= 10 + 15$

$= \$25$

Paul will earn $25, if he only sells 5 combos and gets $2 for every combo he sells plus earns $15 per day.

6. Let n represent the number of weeks for which Erin saves.

$12.50n + 182.73$

b) $12.50n + 182.73$, when $n = 8$ weeks

$12.50(8) + 182.73$

$= 100 + 182.73$

$= \$282.73$

Erin will have $282.73 in her savings account, if her original balance was $182.73 and she makes a deposit of $12.50 into her account each week for 8 weeks.