ECE 160 –Spring 2018 - Solution to Prj 3 (evalexpr.txt)

```
1.   5 + 7/2          / higher precedence than +
     5 +  3           integer division
       8

2.   5.0 + 7/2        / higher precedence than +
     5.00000000000 +  3  integer division
        8.000000000000

3.   5 + 7.0f/2       / higher precedence than +
     5 + 3.500000          mixed mode division
       8.500000            mixed mode addition

4.   19%3              Quotient is 6, remainder 1
       1 (int)

5.   3%19              Quotient is 0, remainder 3
       3 (int)

6.   3.0%19.0
     Illegal           % only works with int

7.   19/3
       6               integer division

8.   3/19
      0                integer division

9.   3.0/10.0
      0.300000000000000

10.  10.0f/3.0f
      3.333333

11.  10/3.0    int / double gives double
      3.33333333333333

12   3/10.0    int / double give double
      0.300000000000000


13.  5.0               + 5 + 5 % 10 * 2
     5.000000000000 + 5 +   5    * 2
     5.000000000000 + 5 +      10
     10.000000000000    +      10
                  20.000000000000

14.  3.0              + 8.0 * 10            / 20
     3.00000000000 +  80.000000000000  / 20
     3.00000000000 +         4.000000000000
              7.000000000000
```

15.
```
5 * 3 % 3 / 6 + 14 + 10 / 2
 15   % 3 / 6 + 14 + 10 / 2
      0   / 6 + 14 + 10 / 2
          0   + 14 + 10 / 2
          0   + 14 +    5
             14    +    5
                      19
```

16.
```
5 * (3 % 3) / 6 + 14.0 + 10/3
5 *    0    / 6 + 14.000000000000 + 10/3
   0       / 6 + 14.000000000000 +   3
           0   + 14.000000000000 +   3
             14.000000000000     +   3
                      17.000000000000
```

17.
```
2 * 3 + (4 + 5) % 2 * 6
2 * 3 +    9    % 2 * 6
  6   +    9    % 2 * 6
  6   +         1   * 6
  6   +             6
         12
```

18.
```
100 / 20 / 5 / 2
    5    / 5 / 2
         1   / 2
             0
```

19.
```
int big=2; float abc=2.5, g;
g = big / 2 + big * 4 / big – big + abc / 3
g =  2  / 2 +  2  * 4 /  2  -  2  + 2.5 / 3
g =     1   +     8   /  2  -  2  + 0.8333333
g =     1   +         4     -  2  + 0.8333333
g =         5               -  2  + 0.8333333
g =                         3     + 0.8333333
g =                             3.833333
Final value for g:  3.833333
```

20.
```
int ink=4, act=1, on; float tig=3.2;
on = ink * act / 2 + 3 / 2 * act + 2 + tig;
on =  4  *  1  / 2 + 3 / 2 *  1  + 2 + 3.2
on =     4     / 2 + 3 / 2 *  1  + 2 + 3.2
on =           2   + 3 / 2 *  1  + 2 + 3.2
on =           2   +   1   *  1  + 2 + 3.2
on =           2   +       1     + 2 + 3.2
on =               3             + 2 + 3.2
on =                             5   + 3.2
on =                                8.2
Final value for on:  8
```

21.
```
int qui=4, add=2, gmd=2, s;
s = qui * add / 4 – 6 / 2 + 2 / 3 * 6 /  2
s =  4  *  2  / 4 – 6 / 2 + 2 / 3 * 6 /  2
s =     8     / 4 – 6 / 2 + 2 / 3 * 6 /  2
s =           2   - 6 / 2 + 2 / 3 * 6 /  2
s =           2   -   3   + 2 / 3 * 6 /  2
s =           2   -   3   +   0   * 6 /  2
s =           2   -   3   +       0   /  2
s =           2   -   3   +           0
s =               -1      +           0
s =                       -1
Final value for s:  -1
```

22.
```
int a=4, g=3, s;
s = 1 / 3 * a / 4 – 6 / 2 + 2 / 3 * 6 / g;
s = 1 / 3 * 4 / 4 - 6 / 2 + 2 / 3 * 6 / 3
s =   0   * 4 / 4 - 6 / 2 + 2 / 3 * 6 / 3
s =       0   / 4 - 6 / 2 + 2 / 3 * 6 / 3
s =           0   - 6 / 2 + 2 / 3 * 6 / 3
s =           0   -   3   + 2 / 3 * 6 / 3
s =           0   -   3   +   0   * 6 / 3
s =           0   -   3   +       0   / 3
s =           0   -   3   +           0
s =              -3       +           0
s =                      -3
Final value for s:  -3
```

23.
```
float g;
g = 10 / 5 / 2 / 1;
g =    2   / 2 / 1
g =        1   / 1
g =            1
Final value for g:  1.000000
```

24.
```
float b;
b = 3 / 2 + 5 * 4 / 3;
b =   1   + 5 * 4 / 3
b =   1   +  20   / 3
b =   1   +       6
b =       7
Final value for b:  7.000000
```

25.
```
float a,c;
int b;
a = b = c = 3.0 / 4.0
a = b = c = 0.750000000000

Final value for c: 0.750000
Final value for b: 0
Final value for a: 0.000000
```

26. `Z= ( 0.5+8.8*pow(a+b,2)/c+(2*a)/(q+r+s) )/( (a+b)*(1/m) );`
    OR
    `Z=( 0.5+8.8*(a+b)*(a+b)/c+(2*a)/(q+r+s) )/( (a+b)*(1/m) );`

27. `x=(-b+sqrt(b*b-4*a*c))/(2*a);`

28. `R=(2*v + 6.22*(c+d))/(g+v);`

29. `A=( 7.7*b*(x*y+a)/c - 0.8 + 2*b ) / ( (x+a) * (1/y) );`

30. `0 2 0.000000 2.000000`

31. `a = 0, b = -6`

32. `2` should be 1.000000

33. `nn`
    `nn`
    `nn /n/n nn/n`