

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 +  
 $5.000000000000 + 3$  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.  $3.0/10.0$   
 $0.3000000000000000$
10.  $10.0f/3.0f$   
 $3.333333$
11.  $10/3.0$  int / double gives double  
 $3.3333333333333333$
12.  $3/10.0$  int / double give double  
 $0.3000000000000000$
13.  $5.0 + 5 + 5 \% 10 * 2$   
 $5.000000000000 + 5 + 5 * 2$   
 $5.000000000000 + 5 + 10$   
 $10.000000000000 + 10$   
 $20.000000000000$
14.  $3.0 + 8.0 * 10 / 20$   
 $3.000000000000 + 80.000000000000 / 20$   
 $3.000000000000 + 4.000000000000$   
 $7.000000000000$

```
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 = 0.7500000000000000

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

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

27.  $x = (-b + \text{sqrt}(b*b - 4*a*c)) / (2*a);$

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

33. nn

nn  
nn /n/n nn/n