1. Suppose we have the following declarations:

```
int i = 3, j = 4, k = 5;
float x = 34.5f, y = 12.25f;
```

Determine the value for each of the following expressions, or explain why it is not a valid expression.

a. `(x + 1.5) / (250.0 * (i/j))`
b. `x + 1.5 / 250.0 * i / j`
c. `-x * -y * (i + j) / k`
d. `(i / 5) * y`
e. `Math.min(i, Math.min(j,k))`
f. `Math.exp(3, 2)`
g. `y % x`
h. `Math.pow(3, 2)`
i. `(int)y % k`
j. `i / 5 * y`

2. Suppose we have the following declarations:

```
int m, n, i = 3, j = 4, k = 5;
float v, w, x = 34.5f, y = 12.25f;
```

Determine the value assigned to the variable in each of the following assignment statements, or explain why it is not a valid assignment.

a. `w = Math.pow(3,Math.pow(i,j));`
b. `v = x / i;`
c. `w = Math.ceil(y) % k;`
d. `n = (int) x / y * i / 2;`
e. `x = Math.sqrt(i*i - 4*j*k);`
f. `m = n + i * j;`
g. `n = k /(j * i) * x + y;`
h. `i = i + 1;`
i. `w = float(x + i);`
j. `x = x / i / y / j;`

3. Suppose we have the following declarations:

```
int    i, j;
float  x, y;
double u, v;
```

Which of the following assignments are valid?

a. `i = x;`
b. `x = u + y;`
c. `x = 23.4 + j * y;`
d. `v = (int) x;`
e. `y = j / i * x;`

4. Write Java expressions to compute each of the following.

a. The square root of $B^2 + 4AC$ (A and C are distinct variables)
b. The square root of $X + 4Y^3$
c. The cube root of the product of X and Y
d. The area πR^2 of a circle