

1. Answers:

- a. 3
- b. 1
- c. 3
- d. 4
- e. 3

2. Code:

```
1  #include <stdio.h>
2  #include <math.h>
3  int main() {
4      int op, a,b;
5      printf("Enter \n 1 for addition \n 2 for subtraction \n 3 for multiplication \n 4 for division \n 5
        for exponentiation: ");
6      scanf("%d", &op);
7      printf("\nEnter two operands: ");
8      scanf("%d %d", &a, &b);
9      printf("\n%d %d",a,b);
10     switch(op){
11         case 1:
12             printf("%d + %d = %d", a, b, a+b);
13             break;
14         case 2:
15             printf("%d - %d = %d", a,b,a-b);
16             break;
17         case 3:
18             printf("%d * %d = %d", a,b,a*b);
19             break;
20         case 4:
21             printf("%d / %d = %d", a,b,a/b);
22             break;
23         case 5:
24             printf("%d to the power %d = %d", a,b,pow(a,b));
25             break;
26         default: // operator doesn't match any case constant
27             printf("Error! operator is not correct");
28     }
29     return 0;
30 }
```

a.

3. Codes

```

1  #include <stdio.h>
2+ int fact_v(int a){ //call by value
3      int i, r=1;
4+     for(i=1;i<=a;i++){
5         r = r*i;
6     }
7     return r;
8 }
9+ int fact_r(int* a){//call by reference
10     int i, r=1;
11+    for(i=1;i<=*a;i++){
12        r = r*i;
13    }
14    return r;
15 }
16+ int main() {
17     int x=5, res1, res2;
18     res1 = fact_v(x);
19     printf("%d factorial = %d", x,res1);
20     res2 = fact_r(&x);
21     printf("\n%d factorial = %d", x,res2);
22     return 0;
23 }

```

a.