```
# 1.
total_scores = 0
count_a_scores = 0
sum_of_scores = 0
print("Enter test scores. Enter a negative number when you are done.")
while True:
    score = float(input("Enter a test score: "))
    if score < 0:
        break
    total_scores += 1
    sum_of_scores += score
    if score >= 90:
        count_a_scores += 1
if total_scores > 0:
    average = sum_of_scores / total_scores
else:
    average = 0
print("Number of A's (scores 90 or above):", count_a_scores)
print("Average test score:", average)
```

```
Enter test scores. Enter a negative number when you are done.
Enter a test score: 45
Enter a test score: 34
Enter a test score: 90
Enter a test score: 99
Enter a test score: 12
Enter a test score: -9
Number of A's (scores 90 or above): 2
Average test score: 56.0
```

```
# 2.
def count_trailing_zeroes(n):
    count = 0
    while n >= 5:
        n //= 5
        count += n
    return count
factorial_1000 = 1
for i in range(2, 1001):
    factorial_1000 *= i
trailing_zeroes = count_trailing_zeroes(factorial_1000)
print("Number of trailing zeroes in 1000!:", trailing_zeroes)
```

```
Number of trailing zeroes in 1000!: 100596815019273443385925608480750996429843
```

```
# 3.
suits = ['Hearts', 'Diamonds', 'Clubs', 'Spades']
values = ['One', 'Two', 'Three', 'Four', 'Five', 'Six', 'Seven',
          'Eight', 'Nine', 'Ten', 'Jack', 'Queen', 'King', 'Ace']
card_names = []
for suit in suits:
    for value in values:
        card_names.append('{} of {}'.format(value, suit))
for card_name in card_names:
    print(card_name)
```

```
One of Hearts
Two of Hearts
Three of Hearts
Four of Hearts
Five of Hearts
Six of Hearts
Seven of Hearts
Eight of Hearts
Nine of Hearts
Ten of Hearts
Jack of Hearts
Queen of Hearts
King of Hearts
Ace of Hearts
One of Diamonds
Two of Diamonds
```

```
Three of Diamonds
Four of Diamonds
Five of Diamonds
Six of Diamonds
Seven of Diamonds
Eight of Diamonds
Nine of Diamonds
Ten of Diamonds
Jack of Diamonds
Queen of Diamonds
King of Diamonds
Ace of Diamonds
One of Clubs
Two of Clubs
Three of Clubs
Four of Clubs
Five of Clubs
Six of Clubs
Seven of Clubs
Eight of Clubs
Nine of Clubs
Ten of Clubs
Jack of Clubs
Queen of Clubs
King of Clubs
Ace of Clubs
One of Spades
Two of Spades
Three of Spades
Four of Spades
Five of Spades
Six of Spades
Seven of Spades
Eight of Spades
Nine of Spades
Ten of Spades
Jack of Spades
Queen of Spades
King of Spades
Ace of Spades
```

```
# 4.
ones_list = []
for i in range(1, 101):
    ones_list.append(int('1' * i))\
print(ones_list)
```

```
[1, 11, 111, 1111, 11111, 111111, 1111111, 11111111, 111111111, 1111111111, 1
```

```
# 5.
def pollindrome(n):
    if n == n[::-1]:
        return True
    return False
list=[]
for i in range(100001,1000000,1):
    if(pollindrome(str(i))):
        list.append(i)
print("pairs : ")
for i in range(len(list)):
    for j in range(i+1,len(list),1):
        if(list[j]-list[i]<20):
            print(list[i],list[j])
```

```
pairs :
199991 200002
299992 300003
399993 400004
499994 500005
599995 600006
699996 700007
799997 800008
899998 900009
```

```
# 6.
def digit(n):
    list=[]
    while(n!=0):
        list.append(n%10);
        n=n//10;
    return list;
def check(n):
    for i in range(1,n+1):
        list=[]
        list=digit(i)
        sum1=sum(list)
        res=1;
        for j in list:
            res=res*j
        if((sum1+res)==i):
            print(i)
check(10000)
```

```
19
29
39
49
59
69
79
89
99
```