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# **QPrep Quiz**

Started: Feb 19 at 4:07pm

# **Quiz Instructions**

Attempt the quiz questions by hand to check your understanding of the math and python concepts discussed during the course.

Take care to use the correct number of digits after the decimal point as mentioned in the question.

There are MCQs with single correct answers and numerical questions where you have to enter the correct answer in the box.

"Error" in the MCQ options means that the code will result in an error and not run.



Question 2	1 pts
What will be the result of the following code?	
a=10 b=20/a b=b-a print(b)	
○ Error	

<ul><li>○ 8</li><li>○ -8.0</li></ul>	
○ -8.0	
<b>○ -8</b>	

 Question 3
 1 pts

 What will be the result of the following code?

 a=10 b=20/a b=b-a print(b\*\*2)

 16.0

 64.0

 16

 -64

 -16.0

```
What will be the output?

x=10

for i in range(10,20,2):

x=x+i

print(x//2)
```

Question 5 1 pts

What is the output of this code? Round your answer to 2 digits after the decimal point.

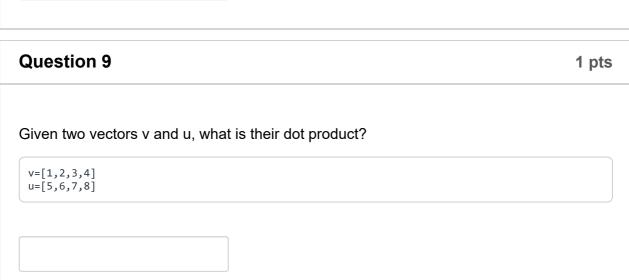
```
x=3
for i in range(3):
    y=i/x
    if y < 0.5:
        z=i
print(x+y+z)</pre>
```

Question 6	1 pts
What is y?	
y=True+False-True*False	

Question 7	1 pts
What is y?	
11 = [1,2,3,4] 12 = [5,6,7,8] y = 11 + 12	
○ [1,2,3,4,5,6,7,8]	
○ [5,12,21,32]	
○ Error	

Question 8 1 pts

For the vector $v = [1,3,5,7,9,12]$ after the decimal point.	,24,2], what is its length? <b>Round</b> your answer to <b>2 digits</b>



Question 10	1 pts
What is the dot product of these two vectors?	
v = [1,2,3]	
u=[-3,6,-3]	

Question 11	1 pts
Consider the vector:	
u=[1,2,2,1]	
Now,	
$u_1=u^Tu$	
$egin{aligned} u_1 &= u^T u \ v &= u_1 u^T \ v_1 &= v/10 \end{aligned}$	
$v_1=v/10$	

What is the length of vector  $v_1$  ?

Round	to the	nearest	integer.

#### **Question 12**

1 pts

Consider:

$$m = \left[ egin{array}{c} 1,2 \ 3,4 \end{array} 
ight]$$

What is the sum of all elements of m@m where @ is matrix multiplication?

**Question 13** 

1 pts

Consider:

$$m=\left[egin{array}{c} 1,2\ 3,4 \end{array}
ight]$$

What is the sum of all elements of  $m \otimes m$  ?

### **Question 14**

1 pts

Consider:

$$m=\left[egin{array}{c} 1,2\ 3,4 \end{array}
ight]$$

$$M=m\otimes ((m\otimes m)\otimes m)$$

Now if s is the sum of all elements of M, and

$$y = s*25\%3$$
 (Python expression)

What is y?

## **Question 15**

1 pts

Consider the two matrices:

$$M_1=\left[egin{array}{c} 1,-1\ -1,1 \end{array}
ight]$$

$$M_2 = \left[egin{array}{c} 1,2 \ 3,4 \end{array}
ight]$$

If x is the [2,2] element of  $M_1M_2$  , what is the second digit of y where y is:

y=-((x\*\*6/8-6\*6+6%6)\*2) (Python Expression)

- **7**
- O 5
- O 6
- **4**

**Question 16** 

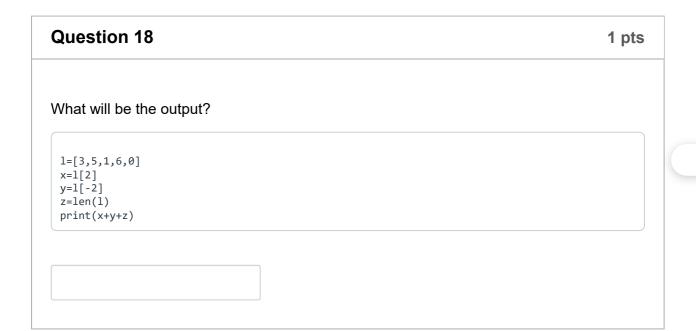
1 pts

Consider the matrix:

$$M=\left[egin{array}{c} 1,2\ 3,4 \end{array}
ight]$$

What is the sum of digits of  $MM^TM$ 

Question 17	1 pts
Consider:	
1=[1,2,3,4,5]	
What is the result of	
1[-1:-4:-1][::-1][-3]**3	



Question 19	1 pts
What is y?	
11 = [1,2,3,4] 12 = [5,6,7,8] y = 11 * 12	
○ [5,12,21,32]	
○ [1,2,3,4,5,6,7,8]	
○ Error	

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 Question 20
 1 pts

 What will be the output?

 t = (1,2,3) 1= [1,2,3] 1[2] = t[1] t[1] = 1[2] print(t)

 (1,2,2)

 (1,3,3)

 [1,2,2]

 Error

 [1,2,3]

+6,

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