

Name:
Year 10 Interleaved Homework 3

This task is not about how much you can remember, it may require you to use the course website

Use this QR code to visit the course website.



to help you answer some questions.

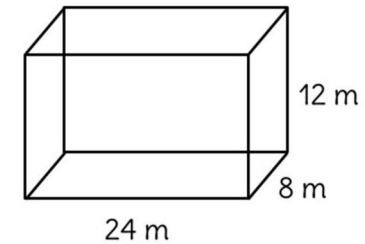
6. State how a binary number is multiplied by 32 using binary shifts

Left shift by 5

7. Explain why we use hexadecimal

Readability

8. Here is a 3D shape



a. Calculate the volume of the shape. Show all your working out.

$$24 \times 8 \times 12 = 12 \times 16 \times 12 = 144 \times 16 = 2304$$

9. Complete the following binary addition

				1	1	1	0	1
+		1	0	0	0	1	0	0
+		1	0	0	1	0	1	0
	1	0	1	0	1	0	1	1

10. Here is a python program that

1. Look at the following data sizes and put them in order from largest (1) to smallest (4)

		Order (1-4)
0.05GB	50	4
0.0025TB	2500	3
25000MB	25000	2
0.005PB	5000000	1

2. Convert FE from hexadecimal to binary. Show all your working out.

$$F = 15 \quad E = 14 \\ 11111110$$

3. Convert 24,000 bits into KB. Show all your working out.

$$24000 / 8 = 3000 \text{ Bytes. } 3000 / 1000 = 3 \text{ KB}$$

4. What does RAM stand for?

Random Access Memory

5. Suggest two pieces of information that are stored in the RAM?

Running program data, background tasks

- Asks the user to input the number of positive points a student has earned.
- If a student has more than 200 points, it outputs "See you on the Principals Challenge Trip"
- If a student has more than 100 points, it outputs that they receive a "You are half way to going on the Trip"
- This loops continuously until the user enters in -1

```

Loop = True while Loop
== True:
    points = int(input("Enter points:"))
    if points == -1:
        print("Exiting the program.")    break
    if points > 200:
        print("See you on the Principal's Challenge Trip")
    elif points > 100:
        print("You are halfway to going on the Trip")
    else:
        print("Keep earning more points!")

```

- Note from Ethan: why loop = True if you're going break the loop!

Using this code to help you, write a Python program that tracks an employee's performance based on the number of points they have earned in a productivity challenge.

Your program should:

- Ask the user to input the number of positive performance points an employee has earned.
- If the employee has more than 300 points, output "You have qualified for the Annual Bonus!"
- If the employee has more than 150 points, output "You are halfway to qualifying for the Annual Bonus!"
- Continue to loop until the user enters -1, which will stop the program.

```

Loop = True
while Loop == True:

```

```

points = input("Enter positive performance points ")
if points.lower() == "exit":
    Loop = False
    print("Exiting program")
    continue
try:
    points = int(points)
except:
    print("It appears you used a string, returning. Type 'exit' to quit the program")
    continue

if points > 300:
    print("You have qualified for the Annual Bonus!")
elif points > 150:
    print("You are more than halfway to the bonus! Keep up the work!")
else:
    print("You are less than half way to reaching the annual bonus, keep up the work!")

```