1. Using the variable x, give definitions for the following:

    (a) An integer

    (b) A pointer to an integer

    (c) An array of 10 integers

    (d) An array of 10 pointers to integers

    (a) int x;

    (b) int *x;

    (c) int x[10];

    (d) int *x[10];

2. What is the output of the following C program?

    ```c
    #include <stdio.h>

    int main ()
    {
      int vals[5] = {4, 3, 2, 5, 1};
      int i;
      for (i=0; i<=5; i++)
        { printf("vals[%d]=%d\n", i,
        vals[i]);
      }
      return 0;
    }
    ```

    vals[0]=4
    vals[1]=3
    vals[2]=2
    vals[3]=5
    vals[4]=1
    vals[5]=32767

3. (a) What is the output of the following C program?

```
# include <stdio.h>
void fun(int y)
{
    y = 30;
}
int main()
{
   int y = 20;
   fun(y);
   printf("%d", y);
   return 0;
}
```

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(b) In the program above, is the variable y in main() stored on the stack or on the heap?

stack

(c) What is the output of this C program?

```
# include <stdio.h>
void fun(int *y)
{
    *y = 30;
}
int main()
{
   int y = 20;
   fun(&y);
   printf("%d", y);
   return 0;
}
```

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(d) In the program above, is the variable y in main() stored on the stack or on the heap?

stack

(e) True or false: &y in main() and y in fun() have the same value.

True