1. Which of the following is a literal?
   (a) 2e5
   (b) false
   (c) literal
   (d) .334

2. Which of the following is a literal?
   (a) string
   (b) 3.19e4
   (c) return
   (d) 39r4

3. Which of the following is a literal?
   (a) _string_
   (b) literal
   (c) else
   (d) "this string is not a literal"

4. Which of the following is not a literal?
   (a) "Awesome"
   (b) 7
   (c) literal
   (d) 3.2e1

5. Which of the following is not a literal?
   (a) 0
   (b) this_is_a_literal
   (c) 2.79
   (d) "Ginormous"

Concept: operations

6. Which is not a legal operation?
   (a) "12" + 3
   (b) 12.9 + 3.3
   (c) 12.9 + 3
   (d) 13.3 + 8

7. Which is not a legal operation?
   (a) 13.3 + 8
   (b) 12.9 + 3.3
   (c) 12.9 + 3
   (d) "13" + "2"

8. Which is not a legal operation?
   (a) 12.5 + 9.1
   (b) 16.3 + 8
9. What is the value of the C expression 9216 / 287937?
   (a) 1
   (b) less than one but greater than zero
   (c) greater than one
   (d) 0

10. What is the value of the C expression 7 / 5?
    (a) 1
    (b) 0
    (c) 1.4
    (d) 2.8

**Concept: types**

11. Which of the following is *not* a legal built-in type?
    (a) char *
    (b) char
    (c) int
    (d) real

12. Which of the following is *not* a legal built-in type?
    (a) double
    (b) string
    (c) char
    (d) int

13. Which of the following is a legal built-in type?
    (a) double
    (b) triple
    (c) quadruple
    (d) single

**Concept: recognizing variables**

14. T or F: The following is a variable: "Hello CS100!"
15. T or F: The following is a variable: HelloCS100
16. T or F: The following is a variable: 1e4
17. Which of the following is *not* a legal variable name?
    (a) X_Y
    (b) sum
    (c) 15_national_championships
    (d) _true

18. Which of the following is *not* a legal variable name?
    (a) i
    (b) Return
    (c) _main
    (d) int

19. Which of the following is *not* a legal variable name?
    (a) __X_Y__
20. Which of the following is a legal variable name?
   (a) return
   (b) 1TwoThree
   (c) And
   (d) if

21. Which is not a legal variable name?
   (a) integers
   (b) first_int
   (c) 9lives
   (d) _3rdFloat

22. Which is a legal variable name?
   (a) 2
   (b) _
   (c) 2.1
   (d) 1True

Concept: spotting variables

23. What variable (if any) is defined in the following code?

   int
   printHi(char *name)
   {
     printf("Hi there, %s\n", name)
     return 0;
   }

   (a) no variable is defined
   (b) int
   (c) "Hi there, \n"
   (d) name

24. What variable (if any) is defined in the following code?

   int
   show(void)
   {
     printf("Show me!\n");
     return 0;
   }

   (a) no variable is defined
   (b) printf
   (c) show
   (d) void

25. What variables are present in the following code?

   void
   printHi(char *name)
   {
     int count = 3;
     printf("Hi There, %s-%d\n", name, count);
     return;
   }
(a) name and count
(b) printHi and name
(c) void and printHi
(d) there are no variables in the code
(e) just name

26. What variables are present in the following code?

```c
void show(void)
{
    printf("Hi There!\n");
    return;
}
```

(a) just printf
(b) show, me, and printf
(c) void and show
(d) there are no variables in the code
(e) just void

27. How many variables are defined in the following code?

```c
char *greeting = "Hi There";

void
printHi(char *name)
{
    printf("%s, %s\n", greeting, name);
    return;
}
```

(a) one
(b) two
(c) none
(d) three

28. How many variables are defined in the following code?

```c
char *greeting = "Hi There,";

void
show(char *me,char *last)
{
    printf("%s, %s %s\n",greeting,me,last);
    return;
}
```

(a) three
(b) two
(c) four
(d) one
(e) none

29. How many variables are defined in the following code?

```c
int main(int argc,char *argv)
{
    int x = 3;
    char *y = "39";
    return x + atoi(y);
}
```
(a) three
(b) four
(c) one
(d) two
(e) none
30. What is the value of \( x \) after this code fragment is executed?

```c
int x,y;
x = 6;
y = x;
y = y + 1;
```

(a) an error results  
(b) 6  
(c) 7  
(d) 5

31. What is the value of \( y \) after this code fragment is executed?

```c
int x,y;
x = 4;
y = x;
x = x + 1;
```

(a) an error results  
(b) 4  
(c) 5  
(d) 6

32. What is the value returned by the function \textit{foo}?

```c
int \textit{foo}(\textit{void})
{
    int x,y;
x = 5;
y = x;
x = x + 1;
    return y;
}
```

(a) an error results  
(b) 6  
(c) 5  
(d) 4

33. Which of the following expressions doubles the value of the variable \( x \) and stores the resulting value back in \( x \)?

(a) \( x = x \times x \);
(b) \( x \times 2 \);
(c) \( x = x \times 2 \);
(d) \( y = x \times 2 \);

34. Which of the following expressions squares the value of the variable \( X \) and stores the resulting value back in \( X \)?

(a) \( X = X \times 2 \)
(b) \( X = \text{pow}(X,2) \);
(c) \( X = X \times (1/\sqrt{2}) \);
(d) \( X \times X \)

35. Which of the following expressions does not cube the value of the variable \( X \) and stores the resulting value back in \( X \)?

(a) \( X \times X \times X \);
(b) \( X = \text{pow}(X,3) \);
(c) \( X = X \times X \times X \);
(d) \( X = \text{pow}(X,2) \times X \);

36. T or F: The following code correctly swaps the values of \( a \) and \( b \).
37. **T** or **F**: The following code correctly swaps the values of $a$ and $b$.

```java
temp = a;
a = b;
b = temp;
```

38. **T** or **F**: The following code correctly swaps the values of $a$ and $b$.

```java
temp = a;
a = b;
b = temp;
```

39. Which set of expressions does *not* correctly swap the values of $a$ and $b$?

(a) $a = b; \ b = a;$
(b) `temp = a; a = b; b = temp`;
(c) `temp1 = a; temp2 = b; b = temp1; a = temp2`;
(d) `temp = b; b = a; a = temp`;