

AP CS A

Unit 1. Primitive Types. Exercises

First set of exercises. Data types and assignment statements.

1. The variable name to the right is a valid variable name. TRUE FALSE	<code>int good_num = 24;</code>
2. The variable name to the right is a valid variable name. TRUE FALSE	<code>double n17 = 4.9;</code>
3. The variable name to the right is a valid variable name. TRUE FALSE	<code>boolean 2boo = true;</code>
4. The variable name to the right is a valid variable name. TRUE FALSE	<code>int two spaces = 2;</code>
5. The variable name to the right is a valid variable name. TRUE FALSE	<code>double int x = 4.0;</code>
6. What is the final value of <i>boo</i> ? a) true b) false c) true and false	<code>boolean boo = true; boo = false;</code>
7. What is the final value of <i>x</i> ?	<code>int x = 9; x = x - 12; x = 20 - 2 * x;</code>
8. What is the final value of <i>z</i> ?	<code>int z; z = 12; z = 15;</code>
9. After these statements are executed, a) <i>g</i> will have a value of 4 and <i>h</i> will have a value of 7 b) <i>g</i> will have a value of 7 and <i>h</i> will have a value of 4 c) <i>g</i> and <i>h</i> will each have a value of 4 d) <i>g</i> and <i>h</i> will each have a value of 7	<code>int g = 7; int h = 4; g = h; h = g;</code>
10. What is the final value of <i>pear</i> ?	<code>double pear = 1.5; pear = 2.0 * pear + 0.5;</code>
11. What is the final value of <i>z3</i> ?	<code>int z3 = 10; z3 = z3 + 5; z3 = 6; z3 = z3 + 7;</code>
12. What are the final values of <i>x</i> and <i>y</i> ? a) <i>x</i> is 4.5 and <i>y</i> is 5.6 b) <i>x</i> is 4.5 and <i>y</i> is 2.3 c) <i>x</i> is 2.3 and <i>y</i> is 5.6 d) <i>x</i> is 2.3 and <i>y</i> is 4.5	<code>double x, y; x = 1.2; y = 3.4; x = y + 1.1; y = x + 1.1;</code>
13. What is the final value of <i>d</i> ?	<code>double d = 2.3; d = 5.0 + d / 10.0;</code>
14. What is the final value of <i>num1</i> ?	<code>double num1 = 4.0; num1 = (num1 + 6.0) / 2.0 + 3.0;</code>
15. What is the value of <i>e</i> ?	<code>double e; e = 4.0 + 20.0 / 2.0 + 2.0;</code>

16. How many numeric literals are in this statement?	int y = 3 * 900;	
17. What is the data type of the numeric literal 400? a) 400 is an int. b) 400 is a double. c) A numeric literal does not have a data type.	double w = 400;	
18. Select the TRUE statement. a) This runs and x will have a value of 17 b) This runs and x will have a value of 18 c) This runs and x will have a value of 17.9 d) This does not run.	int x = 17.9;	
19. Select the TRUE statement. a) This runs and y will have a value of 13 b) This does not run.	int y = 13.0;	
20. Select the TRUE statement. a) Line 1 contains an error. b) Line 2 contains an error. c) There are no errors.	1 2	int g; g = g + 6;
21. Select the TRUE statement. a) Line 2 contains an error. b) There are no errors.	1 2 3	int apples = 12; apples - 4 = apples; apples = apples + 4;

Second set of exercises. Integer division and printing.

22. This statement does not run because you cannot assign a double to an int. TRUE FALSE	int blue = 14.0;	
23. What is the value of <i>red</i> ?	int red = 68 / 10;	
24. What is the value of <i>green</i> ?	int green = 4 / 5;	
25. What is the value of <i>yellow</i> ? a) 2.75 b) 2.0 c) 3.0	double yellow = 11 / 4;	
26. What is the value of <i>aqua</i> ? a) 2.75 b) 2.0 c) 3.0	double aqua = 11 / 4.0;	
27. What is the value of <i>violet</i> ? a) 3.0 b) 3.75 c) 5.0 d) 5.75	double violet = 30 / 8 + 2.0;	
28. What is the value of <i>ochre</i> ? a) 1.0 b) 1.7 c) 2.0	double ochre = (9.0 + 8) / 10;	

29. What is the value of <i>mint</i> ?	<code>int mint= (9.0 + 8) / 10;</code>
a) 1 b) 1.7 c) 2 d) This does not run because a double cannot be assigned to an int.	

30. When this is run, what does the user see?	<code>System.out.print("G");</code> <code>System.out.println("HK");</code>
a) G HK	b) G HK
c) GHK	

31. How many string literals are in this code?	<code>System.out.println("A");</code> <code>System.out.println("good dog");</code>
32. What does this print?	<code>double x = 7 / 4;</code> <code>System.out.println("x is " + x);</code>
a) 1.0 is 1.0 b) x is 1.0 c) 1.75 is 1.75 d) x is 1.75	

33. When this is run, what does the user see?	<code>System.out.println("V");</code> <code>System.out.print("WX");</code> <code>System.out.println("Y");</code> <code>System.out.print("Z");</code>
a) V WXY Z	b) VWX Y Z
c) VWX YZ	
d) V WX Y Z	

34. When this is run, what does the user see?	<code>System.out.println("T");</code> <code>System.out.println("H");</code> <code>System.out.print("E");</code>
a) T HE	b) TH E
c) T H E	

Third set of exercises. Creating and using Scanner objects

<p>35. What goes in the blank so that the program will read in the user's integer?</p> <p>a) nextInt(); b) Scanner.nextInt(); c) v.nextInt(); d) num.nextInt();</p>	<pre>import java.util.Scanner; public class Main { public static void main(String[] args) { Scanner v = new Scanner(System.in); System.out.println("Enter an integer"); int num = _____ System.out.println(num + " is a great integer"); } }</pre>
<p>36. How many assignment statements are in this program?</p>	<pre>import java.util.Scanner; public class Main { public static void main(String[] args) { Scanner can = new Scanner(System.in); System.out.println("Enter a number"); double num = can.nextDouble(); System.out.println(num + " is a great number."); } }</pre>

<p>37. This program will not run because of line 6.</p> <p>TRUE FALSE</p>	<pre>1 import java.util.Scanner; 2 3 public class Main { 4 public static void main(String[] args) { 5 Scanner s = new Scanner(System.in); 6 System.out.print("Number? "); 7 int x = s.nextDouble(); 8 System.out.println("x is " + x); 9 } }</pre>
<p>38. If line 1 is deleted, this program will not run.</p> <p>TRUE FALSE</p>	<pre>1 import java.util.Scanner; 2 3 public class Main { 4 public static void main(String[] args) { 5 int num = 7; 6 System.out.println(num); 7 } }</pre>
<p>39. Select the TRUE statement.</p> <p>a) This program runs. b) There is an error on line 5 that stops this from running. c) Lines 1 to 8 are fine but this program still has a problem that stops it from running.</p>	<pre>1 public class Main { 2 public static void main(String[] args) { 3 Scanner x = new Scanner(System.in); 4 System.out.print("Number? "); 5 int n = x.nextInt(); 6 System.out.println(n); 7 } 8 }</pre>

<p>40. This program should calculate and display the cost of tickets. A regular ticket is \$10 and a discounted ticket is \$8. The user enters the total number of tickets needed and then how many of those are discounted. So, the variable numD will always be less than or equal to tickets. For example, if the user needs 5 tickets and 3 are discounted, then the cost is \$44 (because the 3 discounted tickets are \$8 each and the remaining 2 are \$10 each).</p> <p>What goes on the blank line to complete the program?</p> <p>a) $10 * tickets + 8 * numD$ b) $10 * tickets - 2 * numD$ c) $10 * (tickets - numD) + 8 * numD$ d) $10 * (tickets - numD) + 2 * numD$</p>	<pre>import java.util.Scanner; public class Main { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("How many tickets? "); int tickets = sc.nextInt(); System.out.print("How many get a discount? "); int numD = sc.nextInt(); int cost = _____; System.out.println("The cost is \$" + cost); } }</pre>
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Fourth set of exercises. Casting, increment/decrement operators, compound assignment operators

<p>41. What is printed?</p> <p>a) 5, 5.0 b) 6, 5.0 c) 5, 5.9 d) 6, 5.9</p>	<pre>double zed = 5.9; int x = (int) zed; System.out.print(x + ", " + zed);</pre>
<p>42. What is the value of <i>h</i>?</p> <p>a) -13.0 b) -14.0 c) -15.0</p>	<pre>double g = -13.9; double h = (int) (g - 0.5);</pre>
<p>43. What is printed?</p> <p>a) 4.8, 4.8 b) 4.0, 4.0 c) 4.0, 4.8 d) 4.8, 4.0</p>	<pre>double a = (double) 48 / 10; double b = (double) (48 / 10); System.out.println(a + ", " + b);</pre>
<p>44. What is the final value of <i>num</i>?</p>	<pre>int num = 5; num++; num++;</pre>
<p>45. What is the final value of <i>red</i>?</p>	<pre>int red = 0; red--;</pre>
<p>46. What is the final value of <i>n</i>?</p>	<pre>double n = 1.1; n *= 2;</pre>
<p>47. What is the final value of <i>c</i>?</p>	<pre>int c = 20; c += 8; c--; c += 2;</pre>

48. What is the final value <i>numero</i> ?	<code>int numero = 78; numero /= 10;</code>
49. Select the TRUE statement. a) This does not run because line 2 tries to assign a double to an int. b) The variable <i>branch</i> has a value of 14	<code>double tree = 11; int branch = 3 + tree;</code>

Fifth set of exercises. The mod operator, %

50. What is the value of this expression?	<code>23 % 9</code>
51. What is the value of this expression?	<code>45 % 5</code>
52. What is the value of this expression?	<code>3 % 8</code>
53. What is the value of this expression?	<code>38 / 10</code>
54. What is the value of this expression?	<code>42 % 12</code>
55. What is the value of this expression?	<code>1 % 20</code>
56. List all the possible values of <i>n</i> . a) All integers in the range [0, 11] b) All integers in the range [1, 11] c) All integers in the range [0, 12] d) All integers in the range [1, 12]	<code>int x = some positive integer int n = x % 12;</code>
57. If the user enters 51, what is printed? a) 3 feet and 4 inches b) 4 feet and 3 inches c) 4.25 feet and 3 inches d) 4.25 feet and 0.25 inches 58. If the user enters 6 what is displayed? a) 0 feet and 6 inches b) 6 feet and 0 inches c) 0.5 feet and 0 inches d) 6 feet and 12 inches	<pre>import java.util.Scanner; public class Main { public static void main(String[] args) { Scanner get = new Scanner(System.in); System.out.print("Enter a number"); int n = get.nextInt(); int ft = n / 12; int in = n % 12; System.out.print(ft+ " feet and " +in+ " inches"); } }</pre>
59. If the user enters a 5 and then a 2, what is printed? a) 12.5, 12.5 b) 12.5, 10.0 c) 12.0, 10.0 60. How many assignment statements are in this program?	<pre>import java.util.Scanner; public class Main { public static void main(String [] args){ Scanner tom = new Scanner(System.in); System.out.print("Enter a number "); int x = tom.nextInt(); System.out.print("Enter another number "); int y = tom.nextInt(); double num1 = x * x / y; double num2 = x * (x / y); System.out.println(num1 + ", " + num2); } }</pre>