Critical thinking skills

1. Identifiers

a) Legal identifier names
(legal = starts with letter or _ , no spaces, not starting with number)

totalScore

myName

value1

_count

b) Illegal identifier names (and why)

Illegal Name Why it's illegal

2value cannot start with a number
my name spaces are not allowed
double is a reserved Java keyword
%mark cannot start with a symbol like %

2. Declaring numBeads

a) two statements

```
int numBeads;
numBeads = 5;
```

b) one statement

```
int numBeads = 5;
```

Critical thinking skills

3. Trace the value

a)

```
int myNumber = 5;
int yourNumber = 4;
myNumber = yourNumber + 2;      // (yourNumber is 4 → 4+2 = 6)
yourNumber = myNumber + 5;      // (myNumber is 6 → 6+5 =11)
```

Final value of yourNumber = 11

b)

```
int myNumber;
int yourNumber = 4;
myNumber = yourNumber + 7;      // 4+7 = 11
yourNumber = myNumber;          // now  yourNumber =11
```

Final value of yourNumber = 11

4. Pick data types

Value description	Data type
a) number of basketballs	int
b) price of a basketball	double
c) number of players on team	int
d) average age	double
e) did they get a jersey?	boolean
f) first initial	char

Critical thinking skills

5. Short concept answers

a)

Primitive = built–in simple data type (int, double, boolean, char)

Abstract (or reference/class type) = more complex, made from classes (String, Scanner, etc.)

b)

Class = the blueprint or template

Object = a specific “thing” made from that class (like an instance)

Example:
Class: Car
Object: my 2020 Honda Civic (that is one specific car)

11)

```
y = (int)(j * k); // turn it into int
z = j + k;        // just do it, double is fine
```