Intro to CS
Variable
Problems

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Problems
about
Variables
After these Java commands are carried out by the computer, which diagram best describes what's in the computer?

```java
int x;
x = 37;
```

(A) \[\text{name of the variable} \rightarrow 37 \rightarrow \text{value stored in the variable} \]

(B) \[37 \rightarrow \text{x} \rightarrow \text{(variable)}\]
After these Java commands are carried out by the computer, which diagram best describes what's in the computer?

```java
int x;
x = 37;
x = 58;
```

(A) name of the variable: x, value stored in the variable: 37

(B) name of the variable: x, value stored in the variable: 58
After these Java commands are carried out by the computer, which diagram best describes what's in the computer?

```java
int X;
X = 58;
X = 37;
```

(A)  
(name of the variable) X  
(value stored in the variable) 37

(B)  
(name of the variable) X  
(value stored in the variable) 58
int X;
int Y;
X = 58;
Y = 37;
```c
int X;
int Y;
X = 58;
Y = 37;
X = Y;
```

(A) `X` `37` `Y` `58`

(B) `X` `58` `Y` `37`

(C) `X` `37` `Y` `37`

(D) `X` `58` `Y` `58`
= means copy
(not “is equal” as in math class)
You must also memorize:
= copies

RIGHT

to

LEFT

name of the variable where the copy will be written

= (expression of) the data that will be copied
```c
int X;
int Y;
X = 58;
Y = 37;
X = Y;
```

(A)  
```
x  37
y  58
```

(B)  
```
x  58
y  37
```

(C)  
```
x  37
y  37
```

(D)  
```
x  58
y  58
```
\[ y = 37; \]

Good Java syntax.

\[ 37 = y; \]

Illegal (bad) in Java syntax.
(DON'T CODE THIS!)
int X;
int Y;
X = 58;
Y = 37;
Y = X;

(A)  

(B)  

(C)  

(D)  

Use paper!