

Hoare Tripel

Welche Hoare Tripel sind gültig, welche ungültig? Rechts ist Platz für Notizen, Bemerkungen und Fragen.

gültig ungültig

```
// Precondition: {x >= 0}  
y = 10;  
// Postcondition: {x + y >= 0}
```

```
// Precondition: {x > 0}  
y = x * 2;  
// Postcondition: {y > 0}
```

```
// Precondition: {y != 0 AND z != 0}  
sum = y * y;  
// Postcondition: {x > 0 AND z > 0}
```

```
// Precondition: {true}  
if (x > 1) {  
    y = x * x;  
} else {  
    y = 2;  
}  
// Postcondition: {y > 1}
```

```
// Precondition: {y != 0}  
x = 2 * y * y - 1;  
// Postcondition: {x > 0}
```

```
// Precondition: {(a > 2) && (b == 3)}  
sum = x + y;  
// Postcondition: {sum > 0}
```

```
// Precondition: {(x <= -1) OR (x > 0)}  
y = x * (x + 1);  
// Postcondition: {y >= 0}
```

```
// Precondition: {true}  
y = x * x;  
// Postcondition: {y > x}
```

```
// Precondition: {x > 0}
y = x * x;
sum = y % (x + 1);
// Postcondition: {sum > 1}
```

```
// Precondition {true}
if (x < 0) {
    y = x * 2;
} else {
    y = x + 1;
}
// Postcondition: {y + 1 > x}
```

```
// Precondition: {x > 10}
if (x % 4 == 0) {
    y = x / 4;
} else {
    ;
}
// Postcondition: {y >= 2}
```

```
// Precondition: {x > 10 AND y > 10}
if (x % 4 == 0) {
    y = x / 4;
} else {
    ;
}
// Postcondition: {y > 10}
```

```
// Precondition: {x > 0}
if (x > 5) {
    x = x - 2;
} else {
    x = x + 2;
}
// Postcondition: {x >= 3}
```

```
// Precondition: {x < 15}
if (x < 10) {
    x = x + 3;
} else {
    x = x - 3;
}
// Postcondition: {x < 17 && x >= 3}
```

```
// Precondition: {sum == 0}
for (int i = 1; i <= 5; i++) {
    sum += sum;
}
// Postcondition: {sum == 15};
```

```
// Precondition: {x > 0}
if (x % 2 == 0) {
    x = x / 2;
} else {
    x = x * 3 - 3;
}
// Postcondition: {x > 0}
```

```
// Precondition: {true}
if (x < 5) {
    x *= x;
} else {
    x = x - 1;
}
// Postcondition: {x > 0}
```

```
// Precondition: {y > 0}
if (x > y) {
    x = x - y;
    y = y * 2;
} else {
    x = x * x;
    y = y - x;
}
// Postcondition: {y > 0 && x > 0}
```

```
// Precondition: {y == 0}
if (x > y) {
    x = x + y;
    y = y - x;
} else {
    x = x - y;
}
// Postcondition: {x > y}
```

```
// Precondition: {x != 0}
if (x % 2 == 0) {
    x = x / 2;
} else if (x % 3 == -1) {
    x = x * 3;
} else {
    x = x + 1;
}
// Postcondition: {x != 0}
```

Bestimmen Sie für jede Anweisung die fehlenden Operatoren so, dass die Anweisung die gezeigte Ausgabe erzeugt. Mögliche Operatoren sind +, -, *, / und %.

```
1. System.out.println(36 / (3 * 12    4));
```

```
//Output: 4
```

```
2. System.out.println(64 % (4    8 + 1) / 4);
```

```
//Output: 7
```

```
3. System.out.println(32    (2    6));
```

```
//Output -8
```