

Type Conversions – Demotions/Promotions

For each of the following assignment statements, show the value that will be stored in the variable on the left hand side. Assume that you are given the following declarations:

```
int num;  
float val;  
bool valid;
```

- `num = 17 / 2 + 4;` `num = 12`
- `val = 17 / 2 + 4;` `val = 12.5`
- `num = 17 / 2.0 + 4;` `num = 12.5`
- `val = 17 / 2.0 + 4;` `val = 12.5`
- `num = 11 % 6 / 2 - 1;` `num = 1`
- `val = 11 % 6 / 2.0 - 1;` `val = 1.5`
- `num = 3 - (5 + 10 / (2 * 2));` `num = -4`
- `val = 3 - (5 + 10 / (2 * 3.0));` `val = -3.66667`
- `val = 4.5 * (5 - 3);` `val = 9`
 `num = val;` `num = 9`
- `num = 15 / 2 % 3 - 1;` `num = 0`
- `num = 7 * 2 - 5 / 3;` `num = 13`
 `val = num;` `val = 13`
- `num = 6 + 2/5 - 1;` `num = 5`
- `val = 6 + static_cast<double>(2/5) - 1;` `val = 5`
- `num = 6 + static_cast<double>(2)/5 - 1;` `num = 5`
- `num = 6.0 + 2/static_cast<float>(5) - 1;` `num = 5`
- `val = 6.0 + 2/static_cast<float>(5) - 1;` `val = 5.4`
- `num = 123 / 10 + 3;` `num = 15`

- `num = 123 % 10 + 3; num = 6`
- `val = 123 / 10 + 3; val = 15.3`
- `valid = 7 * 2 - 5 / 3; valid = 1`
- `valid = 17%3 - 22/10; valid = 0`

Character Arithmetic

```
char symbol;
int num;
```

- `symbol = 'a' + 4; symbol = e`
`num = symbol + 8; num = 109`
- `symbol = '}' - 'K'; symbol = 2`

Show what will be displayed by the following code.

- `cout << 'F' + '2'; 120`
- `cout << 'F' + 2; 72`
- `cout << static_cast<int>('F') + '2'; 120`
- `cout << static_cast<char>('F' + '2'); x`
- `cout << 'F' + static_cast<char>(2); 120`