



Computer Engineering
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PHP

Expressions & Operations

CPE5013 - BACK-END PROGRAMMING

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Arithmetic operations

- **Addition**, $\$x + \y
- **Subtraction**, $\$x - \y
- **Multiplication**, $\$x * \y
- **Division**, $\$x / \y (The result will be turned into a "Float" type)
- **Mod**, $\$x \% \y (Return the remainder of the division)
 - Evenly divided (e.g., 10/2, 10/5) → Mod = 0
 - Denominator > Nominator (e.g., 1/2, 10/100) → Mod = Nominator

Question

```
<?php
    $a = 56; $b = 12;
    $divide = $a / $b;
    echo "a / b = $divide";
?>
```

What is the result of this code?

- A. 4
- B. 4.666666666666667
- C. 12
- D. 38

 Multiple Choice

Increment/Decrement

- **Increment**, `$x++`
- **Decrement**, `$x--`

```
<?php
    $a = 56;
    $a++;
    echo "a = $a";
?>
```

The result will be:

`a = 57`

**** Cannot assign and increment at the same time**

`$y = $a++` (Syntax error)

String concatenation (.)

```
<?php
    $a = 'Hello ';
    $b = 'World!';
    echo $a.$b."<br>";
?>
```

The result will be:

Hello World!

Note

- Variable starts with \$
- Multiple space doesn't matter
- Case matters
- Use straight quotes (not curly)
 - Single quote: Print text as it is
 - Double quote: Interpret special char
- Check space carefully when concat
- If it is part of the HTML document, use **
** for starting a new line (\n if using a terminal).

Casting (int) (string) ...

```
<?php
    $a = '20';          /*(string)*/
    $b = 30;           /*(integer)*/
    $plus = $a + $b;
    $conc = $a.$b;
    echo 'Plus = '.$plus.'  
';
    echo 'Concat = '.$conc.'  
';
?>
```

The result will be:

Plus = 50

Concat = 2030

Same as

```
$plus = (int)$a + $b;
```

For other language, there will be a syntax error unless the (int) function is used.

Casting (int) (string) ...

```
<?php
    $a = 'Twenty';           /*(string)*/
    $b = 30;                 /*(integer)*/
    $plus = $a + $b;        /*Syntax error*/
    $conc = $a.$b;
    echo 'Plus = '.$plus.'  
';
    echo 'Concat = '.$conc.'  
';
?>
```

Ternary (one-line if-then-else)

```
<?php
    $a = 123;
    $msg = $a > 100 ? "Large" : "Small" ;
    echo "The baggage is $msg <br>";
?>
```

The result will be:

The baggage is Large

Question

```
<?php
    $a = 75;
    $msg = $a < 70 ? "Low" : "High" ;
    echo "$msg <br>";
?>
```

What will the result be?

- A. Low
- B. High
- C. Error!

 Multiple Choice

Comparison operators

- **Equal** (after casting), $x == y$
- **Identical** (same type), $x === y$
- **Unequal** (after casting), $x != y$
- **Unequal** (after casting), $x <> y$
- **Unidentical** (same type), $x !== y$
- **Less than**, $x < y$
- **Less than or equal**, $x <= y$
- **Greater than**, $x > y$
- **Greater than or equal**, $x >= y$

Question

What is the operation for “not less than”?

A. $x \not< y$

B. $x > y$

C. $x \geq y$

D. $x \not> y$

 Multiple Choice

Condition

```
<?php
    $ans = 42;
    if ( $ans == 42 ) {
        print "Right! <br>";
    } else {
        print "Wrong! <br>";
    }
?>
```

The result will be:

Right!

Assignment

Create a simple web application in PHP that will:

- Receive the baggage weight (kg, float) using an input form.
- Receive the passenger weight (kg, float) using an input form.
- Receive the max baggage weight (kg, float) using an input form.
- Check if the baggage weight is over the maximum limit.
 - If **TRUE**, return "**Overweight baggage!**".
 - Else, calculate the load and return the "**Load = (baggage + passenger) kg**".