Errors:
* Syntax Error (Compile Error)
* Runtime ——— (Exception)
* Logic Error

input
Storage
Process
Output

salary → Variable
byte, short, int, long
$\boxed{700}$ / float, double
char, String

annualSalary = salary * 12

---

mark $\boxed{23}$ FullMark $\boxed{25}$

$$pct = \frac{mark}{FullMark} * 100$$

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Math Operators:
( )
① *, /, %
② +, -

$5 / 2 \Rightarrow 2$
$5.0 / 2 \Rightarrow 2.5$

int x = 5;
int y = 2;
$x / y \Rightarrow 2$
(double) $x / y \Rightarrow 2.5$
(Casting)

$3 + 6 / 2$ →3 →6
$6 / 2 * 3$ →3 →9

$7 \% 3 \Rightarrow 1$
$11 \% 3 \Rightarrow 2$
$10 \% 2 \Rightarrow 0$

Assignment Operator:

int x = 5;
x = 3;
x = (x + 5);
x += 2;
x *= 3;
x -= 5;

x
$\boxed{5}$
3
8
10
30
25
26
27
28
27

x ++;
Sout(x++); ⟹ 26
Sout(++x); ⟹ 28
Sout(x--); ⟹ 28
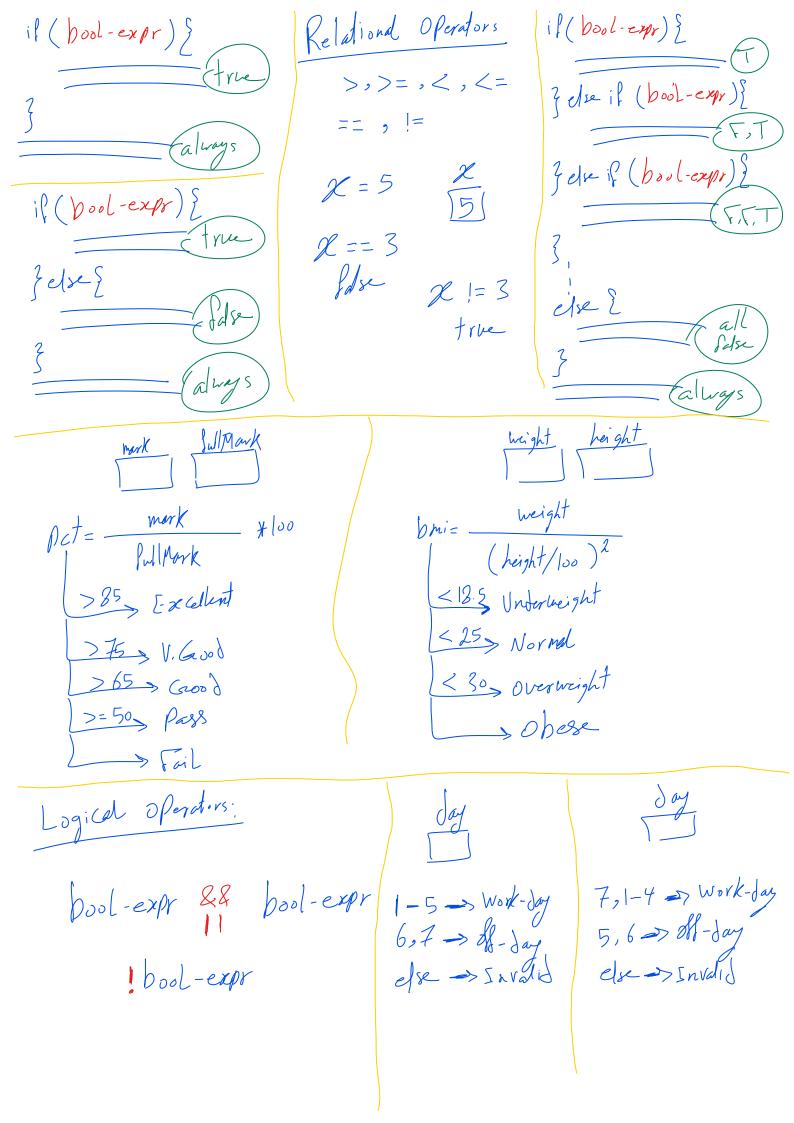
Common Methods:

Math.pow(5,2) ⟹ 25
Math.sqrt(25) ⟹ 5.0
Math.max(5,2) ⟹ 5
Math.min(5,2) ⟹ 2
Math.round(19.6) ⟹ 20
Math.random() → 0.2
                    ↘ 0.7
              0.5

/100
19.6666
* 100

Weight $\boxed{68}$ height $\boxed{182}$

$$bmi = \frac{weight}{(height / 100)^2}$$

20.5 —

0599 888 921

HW
Page 69
(2.1), (2.2), (2.5)

Panel 1 (top-left)

```
if ( bool-expr ) {
    _____
    _____   (true)
}
_____
_____   (always)
```

```
if ( bool-expr ) {
    _____
    _____   (true)
} else {
    _____
    _____   (false)
}
_____
_____   (always)
```

Panel 2 (top-middle)

Relational Operators

$>, >=, <, <=$

$==, !=$

$x = 5$

$x == 3$
false

$\dfrac{x}{5}$

$x \,!= 3$
true

Panel 3 (top-right)

```
if ( bool-expr ) {
    _____
    _____   (T)
} else if ( bool-expr ) {
    _____
    _____   (F, T)
} else if ( bool-expr ) {
    _____
    _____   (F, F, T)
}
.
.
else {
    _____
    _____   (all false)
}
_____
_____   (always)
```

Panel 4 (middle-left)

```
[ mark ]   [ fullMark ]
```

$$pct = \dfrac{mark}{fullMark} * 100$$

- $> 85 \longrightarrow$ Excellent
- $> 75 \longrightarrow$ V. Good
- $> 65 \longrightarrow$ Good
- $>= 50 \longrightarrow$ Pass
- $\longrightarrow$ Fail

Panel 5 (middle-right)

```
[ weight ]   [ height ]
```

$$bmi = \dfrac{weight}{(height/100)^2}$$

- $< 18.5 \longrightarrow$ Underweight
- $< 25 \longrightarrow$ Normal
- $< 30 \longrightarrow$ Overweight
- $\longrightarrow$ Obese

Panel 6 (bottom-left)

Logical Operators:

bool-expr && bool-expr
          ||

! bool-expr

Panel 7 (bottom-middle)

```
[ day ]
```

- $1-5 \Longrightarrow$ Work-day
- $6, 7 \longrightarrow$ off-day
- else $\Longrightarrow$ Invalid

Panel 8 (bottom-right)

```
[ day ]
```

- $7, 1-4 \Longrightarrow$ Work-day
- $5, 6 \Longrightarrow$ off-day
- else $\Longrightarrow$ Invalid

```
switch (expr ) {
    case value1:
    _____
    _____
        break;
    case value2:
    _____
    _____
        break;
    case value3:
    _____
    _____
        , break;
    default:
    _____
    _____
}
```