

Answers

1) String socialSecurityStatus = (age > 65) ? "eligible" : "ineligible";

2) (a) f // displays 3rd character as index starts from 0

(b) 15 // length of string

(c) • friend // start at position 2 and extract upto 9

• iendly face // starts at position 3 and extract remaining characters

3) (a) final double pi = Math.PI;
double A = pi * Math.pow(x, 2);

(b) double diag = Math.sqrt(Math.pow(len, 2) + Math.pow(wid, 2));

4) (a) $3 * 5 / 9 \div 2$ // left to right
= $15 / 9 \div 2$
= $1 \div 2$
= $1 //$

⑥

4A3 & 5

// first 2

$$= 4 \wedge (\overset{0000}{0011} \& 0101)$$

$$= 4 \wedge (00000001)$$

$$= 00000100 \wedge 00000001$$

=

$$\therefore 0bX00000101$$

$$= 5_d$$

⑦

(13 >> 2) < 4

// left to right

first shift oper

$$= (3 \< 2) \wedge 4$$

$$= 12 \wedge 4$$

$$= 8$$

$$13 = 0b00001101$$

$$13 \gg 2 = 0b00000011$$

$$= 3_d$$

$$3 = 0b00000011$$

$$3 \ll 2 = \cancel{0b000000} 0b00001100$$

$$= 12_d$$

$$12 \wedge 4$$

$$12 = 0b00001100$$

$$4 = 0b00000100$$

$$0000100 \oplus$$

$$= 0000100 \oplus$$

$$= 8_d$$

$$\textcircled{d} \quad 32 \parallel \underline{16/3} \gg 2 \& 5$$

// first * 1%

$$= 32 \parallel (5 \gg 2) \& 5$$

// shift operator

$$= 32 \parallel (1 \& 5)$$

$$= 32 \parallel 1$$

$$= 33_d$$

$$5 = 0b00000101$$

$$5 \gg 2 = 0b00000001$$

$$\Rightarrow 1_d$$

$$5 = 0b00000101$$

$$1 = 0b000000001$$

$$0b00000001$$

$$= 1_d$$

$$32 = 0b00100000$$

$$1 = 0b00000001$$

$$0b00100001$$

$$= 33_d$$

\textcircled{e} Case 1: if b is not defined

= the statement will not compile because b can't be recognized by the compiler.

Case 2: if b is defined at first

= The statement will compile because

int a = (b = 5) !

b will be initialized as right to left precedence then a = 5 !