

Let us C

Chapter 2: C instructions

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B.

$$(d) R = x * x + 2 * x + 1 / 2 * x * x + x + 1$$

(x=3.5, assume R to be float)

Solution: The operator to be evaluated is underlined

$$\begin{aligned} R &= x * x + 2 * x + 1 / 2 * x * x + x + 1 \\ &= \underline{3.5 * 3.5} + 2 * 3.5 + 1 / 2 * 3.5 * 3.5 + 3.5 + 1 && (* \text{ and } / \text{ has same precedence but associativity left to right}) \\ &= 12.25 + 2 * \underline{3.5} + 1 / 2 * 3.5 * 3.5 + 3.5 + 1 \\ &= 12.25 + 7.0 + \underline{1 / 2} * 3.5 * 3.5 + 3.5 + 1 && (\text{since } 1 \text{ and } / \text{ is integer constant result will be quotient i.e. } 0) \\ &= 12.25 + 7.0 + 0 * \underline{3.5} * 3.5 + 3.5 + 1 \\ &= 12.25 + 7.0 + 0 * \underline{3.5} + 3.5 + 1 \\ &= \underline{12.25 + 7.0} + 0 + 3.5 + 1 \\ &= \underline{19.25} + 0 + 3.5 + 1 \\ &= \underline{19.25} + 3.5 + 1 \\ &= \underline{22.25} + 1 \\ &= \underline{23.25} \end{aligned}$$

C.

$$(b) b = 3 / 2 + 5 * 4 / 3$$

Solution: The operator to be evaluated is underlined

$$\begin{aligned} b &= \underline{3 / 2} + 5 * 4 / 3 && (* \text{ and } / \text{ has same precedence but associativity left to right}) \\ &= 1 + \underline{5 * 4} / 3 \\ &= 1 + \underline{20} / 3 \\ &= \underline{1 + 6} \\ &= 7 \end{aligned}$$

$$(d) x = 2 - 3 + 5 * 2 / 8 \% 3$$

Solution: The operator to be evaluated is underlined

$$x = 2 - 3 + \underline{5 * 2} / 8 \% 3 \quad (*, / \text{ and } \% \text{ has same precedence but associativity left to right})$$

$$= 2 - 3 + \underline{10} / 8 \% 3$$

$$= 2 - 3 + \underline{1 \% 3}$$

$$= \underline{2 - 3} + 1 \quad (+ \text{ and } - \text{ has same precedence but associativity left to right})$$

$$= -1 + 1$$

$$= 0$$

$$(f) y = z = -3 \% -8 / 2 + 7$$

Solution: The operator to be evaluated is underlined

$$y = z = -\underline{3 \% -8} / 2 + 7 \quad (/ \text{ and } \% \text{ has same precedence but associativity left to right})$$

$$= -\underline{3} / 2 + 7$$

$$= -1 + 7$$

$$= 6$$