FUNCTIONS REVIEW

- **State whether each of the following relations is a function (yes/no) and explain.**

1) $\{(0,0),(2,4),(3,6),(4,8),(5,10)\}$ ☐

Explain: _____

2) $\{(1,1),(4,2),(9,3),(1,-1),(4,-2)\}$ ☐

Explain: _____

3) $\{(0,0),(1,0),(2,0),(3,0),(4,0)\}$ ☐

Explain: _____

4) $\{(3,1),(3,2),(3,3),(3,4)\}$ ☐

Explain: _____

- **Solve**

Given $f(x)=5x-4$, evaluate:

5) $f(3)$ ☐ **6)** $f(-2)$ ☐ **7)** $f(0)$ ☐ **8)** $f(a)$ ☐

Given $F(x)=x^2+3x-4$, evaluate:

9) $F(4)$ ☐ **10)** $F(-4)$ ☐ **11)** $F(-1)$ ☐ **12)** $F(0)$ ☐

Given $H(p)=\dfrac{3p}{P+2}$, evaluate:

13) $H(1)$ ☐ **14)** $H(-3)$ ☐ **15)** $H(0)$ ☐ **16)** $H(0.5)$ ☐

17) The amount of income tax, T, a person must pay depends on the annual income, I, of that person. The table below shows the income tax for selected incomes.

Income (in dollars)	Tax (T)
$0 \le I < 8,500$	\$850
$8,500 \le I < 34,500$	\$5,175
$34,500 \le I < 83,600$	\$20,100
$83,600 \le I < 174,400$	\$48,832
$174,400 \le I < 379,150$	\$125,120

Evaluate the function when:

a) $I = \$30,000$

b) $I = \$83,600$

18) The semiannual cost, C, for comprehensive auto insurance depends on the value, V, of a car. The table below gives the cost of insurance for selected values of a car.

Value of car (in dollars)	Cost of insurance (C)
$1,000 \le V < 2,500$	\$34
$2,500 \le V < 5,000$	\$47
$5,000 \le V < 10,000$	\$134
$10,000 \le V < 15,000$	\$249
$15,000 \le V < 25,000$	\$425

Evaluate the function when:

a) $V = \$10,000$

b) $V = \$18,000$

➢ **Find the domain and range of the function.**

19) $\{(1,1),(2,4),(3,7),(4,10),(5,13)\}$

Domain:

Range:

20) $\{(0,1),(1,2),(4,3),(9,4)\}$

Domain:

Range:

21) $\{(0,-5),(5,0),(10,5),(15,10)\}$

Domain:

Range:

22) $\{(2,6),(4,18),(6,38),(8,66),(10,102)\}$

Domain:

Range:

➢ **Find the range of the function defined by each equation**

23) $f(x) = 4x - 3 \qquad domain = \{0,\ 1,\ 2,\ 3\}$

Range:

24) $H(x) = 1 - x^2 \qquad domain = \{-2, -1,\ 0,\ 1,\ 2\}$

Range: