

## Classroom Division Questions 1 -5

**1. Computer Number Systems**

Convert 246 from octal to hexadecimal

**2. Computer Number Systems**

Solve for  $X_{16}$

$$X_{16} = BA358_{16} + AE8BC_{16}$$

**3. What Does This Program Do**

After the following program is run, what is the final value of C?

```

10 C = 0: K = 0: S = 1
20 IF S < 0 THEN C = C - 1 ELSE C = C + 1
30 K = K + 1: S = - S
40 IF K <> 8 THEN GOTO 20
50 END

```

**4. Recursive Functions**

Find  $f(6)$

$$f(x) = \begin{cases} f(x-1) + x & \text{if } x \geq 4 \\ 2x & \text{otherwise} \end{cases}$$

**5. Recursive Functions**

Find  $f(17)$

$$f(x) = \begin{cases} x - f(x+1) & \text{if } x < 3 \\ 2x & \text{if } 3 \leq x < 5 \\ x + f(x-5) & \text{otherwise} \end{cases}$$

**Classroom Division Questions 6 - 10****6. Computer Number Systems**

Convert BED from hexadecimal to octal

**7. Computer Number Systems**

Solve for  $X_{16}$

$$X_{16} = 24415_8 + 56712_8$$

**8. LISP**

Evaluate:

(ADD (SUB 4 5) (ADD 6 3) (MULT 4 8))

**9. Recursive Functions**

Find  $f(7)$

$$f(x) = \begin{cases} f(x-2) + 2 & \text{if } x > 2 \\ x + 2 & \text{otherwise} \end{cases}$$

**10. Recursive Functions**

Find  $f(7,4)$

$$f(x,y) = \begin{cases} x - y & \text{if } x \leq 0 \\ x - f(x-2, y-1) & \text{if } x > 0 \text{ and } x \text{ is even} \\ y - f(y-2, x-1) & \text{if } x > 0 \text{ and } x \text{ is odd} \end{cases}$$