American Computer Science League

Contest #2

Elementary Division Solutions

$$84 + 52 - *2/ \rightarrow (8 + 4) (5 - 2) *2/ \rightarrow 123 *2/ \rightarrow (12 *3) 2/ \rightarrow 362/ \rightarrow = 18$$

1. 18

2. Prefix/Infix/Postfix

$$+8 - * + 2 3 + 7 1 ^5 2$$

 $\rightarrow +8 - * (2 + 3) (7 + 1) (5 ^2)$
 $\rightarrow +8 - *5 8 25 \rightarrow +8 - (5 * 8) 25$
 $\rightarrow +8 - 40 25 \rightarrow +8 (40 - 25)$
 $\rightarrow +8 15 \rightarrow 8 + 15 = 23$

2. 23

3. Prefix/Infix/Postfix

$$3+4*5-6/2 \rightarrow 3+(*45)-(/62)$$

 $\rightarrow (+3*45)-(/62) \rightarrow -(+3*45) (/62)$
 $\rightarrow -+3*45/62$

3. -+3*45/62

4. Prefix/Infix/Postfix

$$((3+4)*5-(6+4)/2)^2$$

$$\rightarrow ((34+)*5-(64+)/2)^2$$

$$\rightarrow ((34+5*)-(64+2/))^2$$

$$\rightarrow (34+5*64+2/-)^2 \rightarrow 34+5*64+2/-2$$

4. $34 + 5 * 64 + 2 / -2^{\wedge}$

5. Prefix/Infix/Postfix

$$-/* + 75 - 832^{42}$$

$$\rightarrow -/* (75 +) (83 -) 2 (42^{4})$$

$$\rightarrow -/ (75 + 83 - *) 2 (42^{4})$$

$$\rightarrow -(75 + 83 - *2/) (42^{4})$$

$$\rightarrow 75 + 83 - *2/42^{4}$$

5. $75 + 83 - *2/42^{-}$