• Practice:

1. 23, 28, 38, 53, 73, ?

2. 17, 45, 148, 607, ?, 18331

3. 5, 366, 655, ?, 1049, 1170

4. 1598, 798, 398, 198, ?, 48

5. 2, 3, 14, ?, 2068, 51705
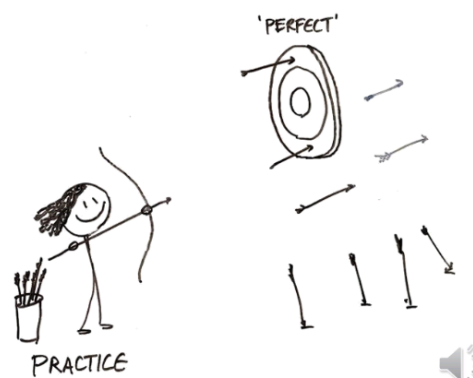
'PERFECT'

PRACTICE

$14 \rightarrow ?$

$? \rightarrow 2068$

$2068 \rightarrow 51705$

$51705 \div 2068 \approx 25$

$2068 \div ? \approx ?$

$14 \rightarrow ?$

Try $\times 5 + 3 = 14 \times 5 + 3 = 73$

$73 \times 6 + 5 = 438 + 5 = 443$ ✗

$14 \times 10 + 6 = 146$

$146 \times 14 + 12 = 2068$ ✓

$2068 \times 25 + 5 = 51705$ ✓

$\underline{\underline{146}}$

$$1170 - 1049 = 121$$

$$361 = 19^2$$
$$289 = 17^2$$
$$?$$
$$121 = 11^2$$

Seems like squares decreasing by 2: 19^2, 17^2, 15^2, 13^2, 11^2

$15^2 = 225 \rightarrow$ next $\Rightarrow 655 + 225 = 880$

Check:
$$1049 - 880 = 169 \rightarrow 13^2 \checkmark \qquad \underline{880}$$

4) 1598, 798, 398, 198, ?, 48

$$1598 - 800 = 798$$
$$798 - 400 = 398$$
$$398 - 200 = 198$$
$$198 - 100 = \underline{\underline{98}}$$
$$98 - 50 = 48$$

5) 2, 3, 14, ?, 2068, 51705

$$2 \rightarrow 3 \ (+1)$$
$$3 \rightarrow 14 \ (\times 4 + 2)$$

1) 23, 28, 38, 53, 73, ?

$28 - 23 = 5$

$38 - 28 = 10$

$53 - 38 = 15$

$73 - 53 = 20$

   Next difference = 25

   $73 + 25 = \underline{\underline{98}}$

2) 17, 45, 148, 607, ?, 18331

$45 = 17 \times 2 + 11$

$148 = 45 \times 3 + 13$

$607 = 148 \times 4 + 15$

$? = 607 \times 5 + 17$

$3035 + 17 = \underline{\underline{3052}}$

3) 5, 366, 655, ?, 1049, 1170

$366 - 5 = 361$

$655 - 366 = 289$

$? - 655 = ?$

$1049 - ? = ?$