1.

$$\begin{aligned}\{[(46+28)\times 2+6]-56\div 7\}-17 &= \{[74\times 2+6]-56\div 7\}-17\\ &= \{[148+6]-56\div 7\}-17\\ &= \{154-56\div 7\}-17\\ &= \{154-8\}-17\\ &= 146-17\\ &= \boxed{129}\end{aligned}$$

2. $\boxed{7}$

3. $\boxed{2,\ 3,\ 5,\ 41}$

4. $\boxed{2^2\times 3^2\times 11\times 19}$

5. $\boxed{16}$

6. $9000=2^3\times 3^2\times 5^3$. 9000 has $(3+1)\times(2+1)\times(3+1)=4\times 3\times 4=\boxed{48}$ positive integer factors.

7. 249 is divisible by 3
   247 is divisible by 13
   243 is divisible by 3
   We can check just the factors smaller than $\sqrt{241}\approx 16$ to see that $\boxed{241}$ is prime.

8. $\boxed{15}$

9. $\boxed{144}$

10. $\boxed{6}$