



Math Olympiad and Problem Solving Programs
E130 - Honors Geometry Problem Solving
Problem Set 9.2 - Whole Numbers

Name:

Date:

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. $\boxed{6}$