1. _____

2. _____

3. _____

4. _____ (common fraction)

5. _____

6. _____

7. _____

8. _____

9. Let $ABCD$ be an isosceles trapezoid such that $AD = BC$, $AB = 3$, and $CD = 11$. Let E be a point in the plane such that $BC = EC$ and $AE \perp EC$. Compute AE.

10. Suppose x is a real number with the property that $x^3 - 2x - 3 = 0$. Find the unique triple of integers (A, B, C) such that
$$x^8 = Ax^2 + Bx + C.$$

1. 15

2. 76

3. 714 (*MATHCOUNTS 2006: Chapter Sprint*)

4. 2017/2

5. 8

6. 25 (*MATHCOUNTS 2011: National Sprint*)

7. 60

8. 5

9. Let $ABCD$ be an isosceles trapezoid such that $AD = BC$, $AB = 5$, and $CD = 11$. Let E be a point in the plane such that $BC = EC$ and $AE \perp EC$. Compute AE. $\boxed{55}$
   (*HMMT February 2013: Geometry, with numbers changed*)

10. Suppose x is a real number with the property that $x^3 - 2x - 3 = 0$. Find the unique triple of integers (A, B, C) such that
$$x^8 = Ax^2 + Bx + C.$$
$\boxed{(17, 36, 36)}$