1. Factor completely.

$5y^2 - 15y - 140$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- **A.** $5y^2 - 15y - 140 =$ _____
- **B.** The polynomial is prime.

2. Factor. Remember to use the largest common factor and to check by multiplying. Factor out a negative factor if the first coefficient is negative.

$-2y^2 - 10y$

The answer is _____.

3. Factor completely.

$a^4 - 16$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $a^4 - 16 =$ _____
- **B.** The polynomial is prime.

4. Solve.

$a^2 + a - 20 = 0$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution(s) is/are
  $a =$ _____.
  (Type an integer or a simplified fraction. Use a comma to separate answers as needed. Type each solution only once.)
- **B.** There is no solution.

5. Factor by grouping.

$36x^3 - 27x^2 + 4x - 3$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $36x^3 - 27x^2 + 4x - 3 =$ _____ (Factor completely.)
- **B.** The polynomial is not factorable.

6. Factor the trinomial, or state that the trinomial is prime. Check the factorization using FOIL multiplication.

$3x^2 + 19x - 14$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** $3x^2 + 19x - 14 =$ _____ (Factor completely.)
- **B.** The polynomial is prime.

7. Factor completely.

$v^2 + 64$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $v^2 + 64 =$ _____
- **B.** The polynomial is prime.

8. The shortest side of a right triangle measures 11 m. The lengths of the other two sides are consecutive integers. Find the lengths of the other two sides.

The length of the second side (shorter than the third side) is _____ (1) _____

The length of the third side is _____ (2) _____

(1)
- m.
- m^3.
- m^2.

(2)
- m^2.
- m^3.
- m.

9. Factor completely.

$b^2 - 64$

Select the correct choice below and fill in any answer boxes within your choice.

- **A.** $b^2 - 64 =$ _____
- **B.** The polynomial is prime.

10. Solve.

$v^2 + 9 = 6v$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- **A.** The solution is v = _____.
  (Use a comma to separate answers as needed. Type each solution only once.)
- **B.** There is no solution.