Name: _____   Show work needed to justify your answer.   Date: _____

Factor each polynomial.

1. $q^2 - 121$

4. $r^2 - 9t^2$

7. $x^2 - 4y^2$

12. $a^2 - 49$

15. TICKETING A ticketing company for sporting events analyzes the ticket purchasing patterns. The expression $9a^2 - 4b^2$ is developed to help officials calculate the likely number of people who will buy tickets for a certain sporting event. Factor the expression.

16. BASKETBALL COURT   A half-court basketball court is a square of pavement with an area represented by $x^2 - 25$. Factor the expression.

Determine whether each trinomial is a perfect square trinomial. Write *yes* or *no*. If so, factor it.

18. $4x^2 - 42x + 110$

19. $16x^2 - 56x + 49$

20. $81x^2 - 90x + 25$