LESSON PRACTICE

13A

Tell the nature of each solution by using the discriminant, and then solve to find the exact roots.

Factor when possible.

1. $X^2 + 6X + 9 = 0$

2. $2X^2 + 7X + 3 = 0$

3. $-2X^2 + 3X + 6 = 0$

4. $3X^2 - 2X + 5 = 0$

5. $7X^2 - 3X = 20$

Answer the questions.

1. Tell the nature of the solution to $3X^2 + 7X + 2 = 0$ using the discriminant.

2. Solve to find the exact root(s) of #1. Factor when possible.

3. Tell the nature of the solution to $2X^2 - 5X + 4 = 0$ using the discriminant.

4. Solve to find the exact root(s) of #3. Factor when possible.

5. Tell the nature of the solution to $4X^2 - 2X + 9 = 0$ using the discriminant.

6. Solve to find the exact root(s) of #5. Factor when possible.

7. Tell the nature of the solution to $2X^2 - 4X - 7 = 0$ using the discriminant.

8. Solve to find the exact root(s) of #7. Factor when possible.

Find the roots using the quadratic formula.

9. $2X^2 + 6X = 3$

10. $5X^2 + 4 = 8X$

Solve for X. Complete the square if necessary.

11. $3X^2 + 8X - 3 = 0$

12. Check the answers to #11 by placing them in the original equation.

13. Expand $(X + 2A)^5$.

14. What is the sixth term of $(X - 4)^6$?

15. Expand $(2X - A)^3$.

16. Find the cube root of $8X^3 + 36X^2Y + 54XY^2 + 27Y^3$.

Simplify.

17. $\frac{10 - \sqrt{AX}}{4} \cdot \frac{10 + \sqrt{AX}}{4}$

18. $\frac{2X^2 - \frac{1}{X^2}}{\frac{4}{X}}$

Solve and check the solution.

19. $X + 3 - \frac{6X - 5}{2} = \frac{2X - 7}{6}$

Multiply.

20. $(A + Bi)(A - Bi)$