

EXTRA PRACTICE — Exercises

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Unit V – Second Degree Relations and Higher - Polynomials Part D – Solving Equations and Inequalities by Factoring **Lesson 1 – “Number” Problems**

For each of the following story problems, answer the four analysis questions to find the system of equations needed to solve. Then solve and use common sense to check your answers.

1. If twice a number is subtracted from eight times its square, the remainder is one.
Find the number.

2. Four times a number is increased by three times its square. The result is 95. Find the number.

3. One number is 4 less than three times another. Find the numbers if the difference of their squares is 160.

4. If twice the square of a number is decreased by five times itself, the remainder is 150.
Find the number.

5. One number exceeds another by six. If the larger is divided by the smaller, the quotient is the same as when the smaller is divided by 25. Find the numbers.

EXTRA PRACTICE — Answer Key

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For each of the following story problems, answer the four analysis questions to find the system of equations needed to solve. Then solve and use common sense to check your answers.

1. The number is $-\frac{1}{4}$ or $\frac{1}{2}$

2. The number is $-\frac{19}{3}$ or 5

3. One number is -13 and the other number is -3
One number is 14 and the other number is 6

4. The number is $-\frac{15}{2}$ or 10

5. The larger number is 1 and the smaller number is -5
The larger number is 36 and the smaller number is 30