**Lessons 8-5 to 8-8 Name:**

**Factor each expression.**

|  |  |  |
| --- | --- | --- |
| **1.** *x*2 − 4*x* + 3 | **2.** 3*x*2 − 4*x* + 1 | **3.** *v*2 + *v* − 2 |
|  |  |  |
| **4.** 5*t*2 − *t* − 18 | **5.** *m*2 + 9*m* − 22 | **6.** *x*2 − 2*x* − 15 |
|  |  |  |
| **7.** 2*n*2 + *n* − 3 | **8.** 2*h*2 − 5*h* − 3 | **9.** *m*2 − 25 |
|  |  |  |
| **10.** 9*y*2 − 1 | **11.** 9*y*2 + 6*y* + 1 | **12.** *p*2 + 2*p +* 1 |
|  |  |  |
| **13.** *x*2 + 6*x* + 9 | **14.** 25*x*2 − 9 | **15.** 4*t*2 + *t* − 3 |
|  |  |  |
| **16.** 9*c*2 − 169 | **17.** 4*m*2 − 121 | **18.** 3*v*2 + 10*v* − 8 |
|  |  |  |
|  |  |  |
| **19.** 4*g*2 + 4*g* + 1 | **20.** −*w*2 + 5*w* − 4 | **21.** 9*t*2 + 12*t* + 4 |

**22.** 12*m*2 − 5*m* − 2 **23.** 36*s*2 − 1 **24.** *c*2 − 10*c* + 25

**Use factoring to find expressions for possible dimensions of each figure.**

1. A rectangular parking lot has an area of 10*w*2 − 9*w* − 40.
2. A rectangular door has an area of 12*d*2 − 31*d* + 14
3. A rectangular field has an area of 64*m*2 − 169*n*2.
4. A rectangular prism has a volume of 6*t*3 + 44*t*2 + 70*t*.

**Lesson 8-8**

**Factor each expression.**

|  |  |  |
| --- | --- | --- |
| **29.** 3*y*3 + 9*y*2 − *y* − 3 | **30.** 3*u*3 + *u*2 − 6*u* − 2 | **31.** *w*3 − 3*w*2 + 3*w* − 9 |
| **32.** 4*z*3 + 2*z*2 − 2*z* − 1 | **33.** 3*x*3 + 8*x*2 − 3*x* | **34.** *y*5 − 9*y* |
|  |  |  |
| **35.** 2*p*3 − 4*p*2 + 2*p* − 4 | **36.** 3*y*3 − 3*y*2 − 6*y* | **37.** 2*n*3 + 10*n*2 + 3*n* + 15 |

**Use factoring to find expressions for possible dimensions of each figure.**

1. A rectangular field has an area of 10*k*3 + 25*k*2 − 6*k* − 15.
2. A rectangular swimming pool has an area of 5*x*3 + 5*x*2 − 2*x* − 2.
3. A rectangular sheet of paper has an area of 6*n*3 − 9*n*2 − 8*n* + 12.