**Find two integers with the given sum and product.**

| | Example | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sum | $5 = 4 + 1$ | 5 | 7 | $-6$ | $-6$ | 8 | 10 | $-9$ | $-11$ | $-10$ | 12 |
| Product | $4 = 4 \cdot 1$ | 6 | 6 | 8 | 9 | 15 | 16 | 18 | 24 | 24 | 32 |

**For each trinomial tell which two factors of the constant term have a sum equal to the coefficient of the linear term.**

**Sample** $x^2 - 13x + 22$

**Solution** $(-2)(-11) = 22$ and $-2 + (-11) = -13$
$\therefore -2$ and $-11$ are the correct factors. ***Answer***

**14.** $x^2 + 8x + 7$
**15.** $z^2 - 6z + 5$
**16.** $p^2 - 5p + 6$
**17.** $y^2 + 7y + 12$
**18.** $c^2 - 15c + 14$
**19.** $u^2 + 11u + 18$
**20.** $r^2 + 9r + 20$
**21.** $s^2 - 12s + 20$
**22.** $x^2 - 14x + 24$
**23.** $y^2 + 25y + 24$
**24.** $x^2 + 11x + 28$
**25.** $n^2 - 17n + 30$

## Written Exercises

**Factor. Check by multiplying the factors. If the polynomial is not factorable, write *prime*.**

**A**

**1.** $x^2 + 5x + 4$
**2.** $z^2 + 9z + 8$
**3.** $r^2 - 6r + 8$
**4.** $c^2 - 10c + 16$
**5.** $y^2 - 9y + 14$
**6.** $p^2 - 14p + 13$
**7.** $q^2 + 16q + 15$
**8.** $n^2 + 10n + 21$
**9.** $a^2 - 15a + 26$
**10.** $s^2 - 12s + 40$
**11.** $x^2 + 20x + 36$
**12.** $z^2 + 16z + 39$
**13.** $u^2 + 12u + 28$
**14.** $x^2 - 22x + 72$
**15.** $42 - 23k + k^2$
**16.** $64 - 20s + s^2$
**17.** $75 + 20r + r^2$
**18.** $75 + 27u + u^2$

**Sample** $x^2 - 10xy + 21y^2$

**Solution** $x^2 - 10xy + 21y^2 = (x - ?)(x - ?)$
$= (x - 3y)(x - 7y)$

*Check:* $(x - 3y)(x - 7y) = x^2 - 3xy - 7xy + 21y^2$
$= x^2 - 10xy + 21y^2$

**19.** $p^2 + 19pq + 34q^2$
**20.** $a^2 + 10ab + 24b^2$
**21.** $c^2 - 16cd + 48d^2$
**22.** $x^2 - 15xy + 72y^2$
**23.** $u^2 - 50uv + 49v^2$
**24.** $h^2 - 14hk + 49k^2$
**25.** $x^2 - 16xy + 45y^2$
**26.** $m^2 + 20mn + 51n^2$
**27.** $a^2 + 17ab + 52b^2$
**28.** $p^2 + 20pq + 50q^2$
**29.** $r^2 - 15rs + 54s^2$
**30.** $a^2 - 12ab + 27b^2$