

Factor each polynomial completely.

1. Polynomials with a negative middle term and a positive constant term.

(a) $x^2 - 4x + 3$	(e) $x^2 - 11x + 24$	(i) $x^2 - 17x + 30$
(b) $x^2 - 9x + 14$	(f) $x^2 - 10x + 9$	(j) $x^2 - 19x + 90$
(c) $x^2 - 5x + 6$	(g) $x^2 - 11x + 28$	(k) $x^2 - 15x + 26$
(d) $x^2 - 12x + 35$	(h) $x^2 - 15x + 44$	(l) $x^2 - 9x + 18$

2. Polynomials with a positive middle term and a positive constant term.

(a) $x^2 + 6x + 5$	(e) $x^2 + 14x + 33$	(i) $x^2 + 12x + 27$
(b) $x^2 + 16x + 63$	(f) $x^2 + 11x + 18$	(j) $x^2 + 16x + 28$
(c) $x^2 + 13x + 40$	(g) $x^2 + 11x + 10$	(k) $x^2 + 16x + 55$
(d) $x^2 + 10x + 16$	(h) $x^2 + 5x + 6$	(l) $x^2 + 11x + 28$

3. Polynomials with a negative constant term.

(a) $x^2 - 2x - 63$	(g) $x^2 + x - 20$	(m) $x^2 - 7x - 30$
(b) $x^2 + 2x - 3$	(h) $x^2 - 3x - 10$	(n) $x^2 + 4x - 32$
(c) $x^2 + 4x - 45$	(i) $x^2 - x - 56$	(o) $x^2 - 3x - 28$
(d) $x^2 - x - 30$	(j) $x^2 + 9x - 22$	(p) $x^2 + x - 30$
(e) $x^2 + 5x - 14$	(k) $x^2 - 8x - 9$	(q) $x^2 - 8x - 33$
(f) $x^2 - x - 12$	(l) $x^2 + 6x - 7$	(r) $x^2 + 2x - 63$

4. Polynomials with a zero middle term and a negative constant term.

(a) $x^2 - 1$	(e) $x^2 - 144$	(i) $x^2 - 64$	(m) $x^2 - 100$
(b) $x^2 - 49$	(f) $x^2 - 4$	(j) $x^2 - 81$	(n) $x^2 - 13$
(c) $x^2 - 25$	(g) $x^2 - 36$	(k) $x^2 - 5$	(o) $x^2 - 8$
(d) $x^2 - 9$	(h) $x^2 - 16$	(l) $x^2 - 121$	(p) $x^2 - 3$

5. Polynomials with a zero middle term and a negative fraction as the constant term.

(a) $x^2 - \frac{1}{4}$	(c) $x^2 - \frac{4}{9}$	(e) $x^2 - \frac{25}{4}$	(g) $x^2 - \frac{9}{16}$
(b) $x^2 - \frac{1}{9}$	(d) $x^2 - \frac{49}{81}$	(f) $x^2 - \frac{36}{49}$	(h) $x^2 - \frac{81}{25}$

6. Polynomials with a zero middle term, a negative constant term, and a leading coefficient greater than one.

(a) $4x^2 - 9$	(e) $4x^2 - 625$	(i) $36x^2 - 4$
(b) $25x^2 - 81$	(f) $121x^2 - 81$	(j) $9x^2 - 49$
(c) $49x^2 - 81$	(g) $169x^2 - 100$	(k) $64x^2 - 16$
(d) $16x^2 - 25$	(h) $576x^2 - 64$	(l) $9x^2 - 25$

7. Describe all the polynomials in Questions 4, 5, and 6.