

SM2 5.3: Factoring Quadratic Trinomials

Factor each polynomial completely.

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|---------------------------------------------------|-----------------------------------------------------|
| 1) $n^2 - 17n + 70$
$(n - 7)(n - 10)$ | 2) $9r^2 - 16$
$(3r + 4)(3r - 4)$ |
| 3) $10x^2 - 17x - 45$
Does not factor | 4) $x^2 + 14x + 54$
Does not factor |
| 5) $v^2 + 2v + 16$
Does not factor | 6) $4a^2 + 44a + 120$
$4(a + 6)(a + 5)$ |
| 7) $36a^2 - 64$
$4(3a + 4)(3a - 4)$ | 8) $r^2 - 6r - 27$
$(r - 9)(r + 3)$ |
| 9) $a^2 - 10a + 25$
$(a - 5)^2$ | 10) $n^2 - 9$
$(n - 3)(n + 3)$ |
| 11) $-p^2 - 11p - 10$
$-1(p + 1)(p + 10)$ | 12) $2a^2 + 14a + 12$
$2(a + 6)(a + 1)$ |
| 13) $x^2 - 8x$
$x(x - 8)$ | 14) $6x^2 - 19x - 63$
Does not factor |
| 15) $x^2 - x - 20$
$(x - 5)(x + 4)$ | 16) $25a^2 - 1$
$(5a - 1)(5a + 1)$ |
| 17) $b^2 + 4$
Does not factor (over the reals) | 18) $x^2 + 12x + 32$
$(x + 8)(x + 4)$ |
| 19) $3a^2 + 10a - 50$
Does not factor | 20) $4n^2 - 100$
$4(n + 5)(n - 5)$ |
| 21) $6m^2 + m - 30$
Does not factor | 22) $4a^2 + 25$
Does not factor (over the reals) |
| 23) $4k^2 + 4k - 288$
$4(k - 8)(k + 9)$ | 24) $p^2 - 3p - 4$
$(p - 4)(p + 1)$ |
| 25) $16v^2 - 8v + 1$
$(4v - 1)^2$ | 26) $x^2 + x$
$x(x + 1)$ |
| 27) $4v^2 + 2v + 16$
$2(2v^2 + v + 8)$ | 28) $a^2 - 5a + 6$
$(a - 3)(a - 2)$ |
| 29) $2a^2 + 14a + 12$
$2(a + 6)(a + 1)$ | 30) $4r^2 - 25$
$(2r + 5)(2r - 5)$ |
| 31) $v^3 - 100v$
$v(v + 10)(v - 10)$ | 32) $-28r^2 - 144r - 20$
$-4(x + 5)(7x + 1)$ |
| 33) $5n^2 + 4n - 12$
$(n + 2)(5n - 6)$ | 34) $r^2 - 2r$
$r(r - 2)$ |