

Solve each equation.

11. $(3c + 1)(4c - 5) = 0$

12. $x^2 = -5x$

13. $p^2 = 12p - 27$

14. $2k^2 - 15 = -3k$

⑫ $x^2 = -5x$
 $+5x$ $+5x$
 $x^2 + 5x = 0$
 $x(x+5) = 0$
 $x = 0$ $x+5=0$
 $x = -5$

⑪ $3c + 1 = 0$
 -1 -1
 $3c = -1$
 3 3
 $c = -\frac{1}{3}$

$4c - 5 = 0$
 $+5$ $+5$
 $4c = 5$
 4 4
 $c = \frac{5}{4}$

$$p^2 = 12p - 27$$

$$-12p + 27$$

$$p^2 + 27$$

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| | |
|------|------------|
| | $p - 9$ |
| p | $p^2 - 9p$ |
| -9 | $-9p + 27$ |

$$p^2 - 3p - 9p + 27$$

13

$$p^2 - 12p + 27 = 0$$

$$(p - 9)(p - 3) = 0$$

| | | |
|---------------------------|---|---------------------------|
| $p - 9 = 0$ | } | $p - 3 = 0$ |
| $+9 + 9$ | | $+3$ |
| <u>$p = 9$</u> | | <u>$p = 3$</u> |

Find each product.

1. $(2a-b)(a-3b)$
2. $(2x-3)(2x^2-5x+1)$
3. $(3p-2r)^2$
4. $(3x^2-4y)(4x^2+3y)$

Handwritten work for problem 2:

| | | |
|--------------------------|---------|----------|
| $2x^2$ | $-5x$ | 1 |
| $2x$ | $4x^3$ | $-10x^2$ |
| -3 | $-6x^2$ | $-15x$ |
| $4x^3 - 16x^2 - 13x - 3$ | | |

Handwritten work for problem 3:

| | |
|---------|--------|
| $3p$ | $-2r$ |
| $9p^2$ | $-6pr$ |
| $-2r^2$ | $4r^2$ |

Result for problem 3: $9p^2 - 12pr + 4r^2$

Handwritten work for problem 4:

| | |
|-----------|-----------|
| $3x^2$ | $-4y$ |
| $12x^4$ | $-12x^2y$ |
| $-12xy^2$ | $-12y^3$ |

Result for problem 4: $12x^4 - 12x^2y - 12xy^2 - 12y^3$

Handwritten work for problem 6:

| | |
|--------|--------|
| x | -5 |
| $3x^2$ | $-15x$ |
| 1 | -5 |

Result for problem 6: $(x-5)(3x+1)$

Factor each polynomial.

5. $24t^2 - 32t^4 - 16t^3$
6. $2n^2 + 2nt + 5nt + 5t^2$
7. $m^2 + 11m + 30$
8. $x^2 - 5x - 24$
9. $3x^2 - 14x - 5$
10. $2a^2 + 9a + 7$