

Factor by grouping/ difference of two squares practice

Factor each completely. (Warm Up)

1) $3n^3 + 12n^2 + 5n + 20$

2) $7r^3 + 2r^2 - 49r - 14$

3) $18v^3 + 9v^2 - 6v - 3$

4) $40x^4 - 140x^3 + 10x^2 - 35x$

5) $16m^4 - 12m^3 - 40m^2 + 30m$

6) $25n^3 - 20n^2 + 15n - 12$

7) $4n^2 - 9$

8) $9n^2 - 1$

9) $3b^2 - 27$

10) $18b^2 - 50$

Factor each completely.

11) $-r^2 + 13r - 40$

12) $k^2 + 3k - 28$

13) $2n^2 - 26n + 72$

14) $3x^2 + 24x - 60$

15) $7p^2 + 4p - 20$

16) $5k^2 - 37k + 42$

17) $12x^2 + 34x + 10$

18) $4n^2 - 20n + 21$

Solve each equation by factoring.

19) $v^2 - 24 = 5v$

20) $x^2 + 8x = -15$

21) $7x^2 - 32x = -16$

22) $6p^2 + 14 = 25p$

Answers to Factor by grouping/ difference of two squares practice (ID: 1)

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|---------------------------|-------------------------------------|---|---------------------------|
| 1) $(3n^2 + 5)(n + 4)$ | 2) $(r^2 - 7)(7r + 2)$ | 3) $3(3v^2 - 1)(2v + 1)$ | 4) $5x(4x^2 + 1)(2x - 7)$ |
| 5) $2m(2m^2 - 5)(4m - 3)$ | 6) $(5n^2 + 3)(5n - 4)$ | 7) $(2n + 3)(2n - 3)$ | |
| 8) $(3n + 1)(3n - 1)$ | 9) $3(b + 3)(b - 3)$ | 10) $2(3b + 5)(3b - 5)$ | 11) $-(r - 8)(r - 5)$ |
| 12) $(k + 7)(k - 4)$ | 13) $2(n - 4)(n - 9)$ | 14) $3(x + 10)(x - 2)$ | 15) $(7p - 10)(p + 2)$ |
| 16) $(5k - 7)(k - 6)$ | 17) $2(3x + 1)(2x + 5)$ | 18) $(2n - 7)(2n - 3)$ | 19) $\{8, -3\}$ |
| 20) $\{-5, -3\}$ | 21) $\left\{\frac{4}{7}, 4\right\}$ | 22) $\left\{\frac{7}{2}, \frac{2}{3}\right\}$ | |