

Algebra I
11.4 Warm-Up
Monomial Factoring

NAME: _____
DATE: _____ HOUR: _____

In 1-5, fill in the blanks.

1. $6x^2 + 18x = 6x(\underline{\quad} + \underline{\quad})$ 2. $4y^2 - 6y = 2y(\underline{\quad} - \underline{\quad})$
 3. $-8a^3 + 4a = -4a(\underline{\quad} + \underline{\quad})$ 4. $-9n^4 + 6n^2 = -3n^2(\underline{\quad} + \underline{\quad})$
 5. $12n^3 - 21n^2 + 27n = 3n(\underline{\quad} - \underline{\quad} + \underline{\quad})$

In 6 and 7, find the largest common factor.

6. $-24b^3x, 32b^4x, 48b^2$

 $-1 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot b \cdot b \cdot b \cdot x$
 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot b \cdot b \cdot b \cdot b \cdot x$
 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot b \cdot b$

7. $14r^2s^2, 63r^3s, 42r^2s^3$

 $2 \cdot 7 \cdot r \cdot r \cdot s \cdot s$
 $3 \cdot 3 \cdot 7 \cdot r \cdot r \cdot r \cdot s$
 $-1 \cdot 2 \cdot 3 \cdot 7 \cdot r \cdot r \cdot s \cdot s \cdot s$

In 8-13, factor.

8. $2k^5 + 3k^3$ $2 \cdot \underline{KKKKK} + 3 \cdot \underline{KKK}$

9. $6x^2 + 3$

$k^3(2k^2 + 3)$

over

10. $12c^3 - 15ac^2 - 18c$

11. $x^3y^2 - x^2y^3 + x^2y^2$

12. $3y^2z - 9yz - 12z$

13. $25p^4q^3 + 20p^3q^4 - 35p^2q^3$

Identify each polynomial as prime or composite.

1. $9x^2 + 24x + 15$ _____ 2. $9a^2 + 24a$ _____ 3. $9m^2 + 16$ _____

Factor each polynomial by removing the GCF.

4. $3x^2 - 9x$ $3x(x-3)$
 $3 \cdot x \cdot x - 3 \cdot 3x$

5. $6r^3 + 3r^2 - 7r$ _____

6. $6w^4 + 3w^2 - 9$ _____

7. $3q^2 + 6q^5 + 9q$ _____

8. $18b^3 - 36b^2 - 9$ _____

9. $3v^6 - 9v^4 + 147v^2$ _____

10. $12c^3 - 15ac^2 - 18c$

11. $x^3y^2 - x^2y^3 + x^2y^2$

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$k^3(2k^2 + 3)$