NAME Key DATE SCORE

Using Prime Factorization; Factoring Polynomials

Factor each integer over the set of primes.

1. 36 $2^2 \cdot 3^2$
2. 150 $2 \cdot 3 \cdot 5^2$
3. 132 $2^2 \cdot 3 \cdot 11$
4. 975 $3 \cdot 5^2 \cdot 13$
5. 736 $2^5 \cdot 23$
6. 931 $7^2 \cdot 19$

Find the GCF and LCM of the following.

7. 14, 21 $7, 42$
8. 66, 165 $33, 330$
9. $6x, 3x^2$ $3x, 6x^2$
10. $-15a^2b, 35a^3b$ $5a^2b, 105a^3b$
11. $10c^2d^3, 77c^2d^3$ $c^2d^3, 770c^2d^3$
12. $60m^5n, -300m^2n^4$ $60m^2n, 300m^5n^4$
13. $5r^5s^2t, 65r^2s^3$ $5r^2s^2, 65r^5s^3t$
14. $14a^3bc^2, 21a^2b^2c^3, 42ab^3c$ $7abc, 42a^3b^3c^3$

Factor each polynomial.

15. $6m^2 - 10m$ $2m(3m-5)$
16. $-10b^4 - 15b^2$ $-5b^2(2b^2+3)$
17. $a^2 - 49$ $(a-7)(a+7)$
18. $9c^2 + 30c + 25$ $(3c+5)^2$
19. $8y^3 + 1$ $(2y+1)(4y^2-2y+1)$
20. $9n^2 - 4$ $(3n+2)(3n-2)$
21. $4d^2 - 28d + 49$ $(2d-7)^2$
22. $27z^3 - 8$ $(3z-2)(9z^2+6z+4)$
23. $36h^2 + 25p^2 - 60hp$ $(6h-5p)^2$
24. $36r^2k + 12rk^2 + 27r^3$ $3r(3r+2k)^2$
25. $225u^2 - 100v^2w^2$ $25(3u-2vw)(3u+2vw)$
26. $125e^3 - 27f^3$ $(5e-3f)(25e^2+15ef+9f^2)$
27. $27m^3 - 12mn^2$ $3m(3m-2n)(3m+2n)$
28. $ar - 4bs + 2br - 2as$ $(a+2b)(r-2s)$
29. $2mn - 2mt + 2sn - 2st$ $2(m+s)(n-t)$
30. $3a^3r^2 - 12ab^2$ $3a(ar-2b)(ar+2b)$