

NAME _____

DATE _____

FACTORING PART 1: Worksheet 2

Write the prime factorization of each.

1) 90

2) 54

3) 56

Factor each polynomial completely using the greatest common factor (GCF).

4) $8m - 6$

5) $10q - 25q^2$

6) $c^2d^2 + c$

7) $3a^2b^2 + 6ab + a$

8) $10h^3r^3 - 2hr^2 + 14hr$

9) $5a^2r^3 + 5ar^2 + 15a^3r^4$

Factor each polynomial (the riddle game).

10) $n^2 + 7n + 12$

11) $x^2 + 2x - 8$

12) $y^2 + 3y - 10$

13) $q^2 - 6q + 8$

Factor each polynomial using the difference of two squares. If it cannot be factored, write *prime*.

14) $n^2 - 64$

15) $-16 + p^2$

16) $36 - 100v^2$

17) $4c^2 - 5d^2$

18) $7x^2 - 72t^2$

19) $16a^2 - 49c^6$

Factor completely.

20) $3x^2 + 18x + 15$

21) $6q^2 - 24$

22) $2y^2 + 6y - 36$

23) $10x^2 - 10$

24) $5t^2 - 35t + 60$

25) $3y^2 - 3y - 90$

KEY

FACTORING PART 1: Worksheet 2

Write the prime factorization of each.

1) 90
 $2 \cdot 3^2 \cdot 5$

2) 54
 $2 \cdot 3^3$

3) 56
 $2^3 \cdot 7$

Factor each polynomial completely using the greatest common factor (GCF).

4) $8m - 6$
 $2(4m - 3)$

5) $10q - 25q^2$
 $5q(2 - 5q)$

6) $c^2d^2 + c$
 $c(cd^2 + 1)$

7) $3a^2b^2 + 6ab + a$
 $a(3ab^2 + 6b + 1)$

8) $10h^3r^3 - 2hr^2 + 14hr$
 $2hr(5h^2r^2 - r + 7)$

9) $5a^2r^3 + 5ar^2 + 15a^3r^4$
 $5ar^2(ar + 1 + 3a^2r^2)$

Factor each polynomial (the riddle game).

10) $n^2 + 7n + 12$
 $(n + 3)(n + 4)$

11) $x^2 + 2x - 8$
 $(x + 4)(x - 2)$

12) $y^2 + 3y - 10$
 $(y + 5)(y - 2)$

13) $q^2 - 6q + 8$
 $(q - 2)(q - 4)$

Factor each polynomial using the difference of two squares. If it cannot be factored, write *prime*.

14) $n^2 - 64$
 $(n + 8)(n - 8)$

15) $-16 + p^2$
 $p^2 - 16$
 $(p + 4)(p - 4)$

16) $36 - 100v^2$
 $(6 + 10v)(6 - 10v)$

17) $4c^2 - 5d^2$
prime

18) $7x^2 - 72t^2$
prime

19) $16a^2 - 49c^6$
 $(4a + 7c^3)(4a - 7c^3)$

Factor completely.

20) $3x^2 + 18x + 15$
 $3(x + 5)(x + 1)$

21) $6q^2 - 24$
 $6(q + 2)(q - 2)$

22) $2y^2 + 6y - 36$
 $2(y + 6)(y - 3)$

23) $10x^2 - 10$
 $10(x + 1)(x - 1)$

24) $5t^2 - 35t + 60$
 $5(t - 3)(t - 4)$

25) $3y^2 - 3y - 90$
 $3(y - 6)(y + 5)$