

Factoring Practice

GCF. 1st!

Factor each completely.

1) $v^4 + 5v^3 + 4v^2 = v^2(v^2 + 5v + 4)$

3) $2n^2 - 2n - 60 = v^2(v+1)(v+4)$

5) $2n^2 - 16n + 30 = 2(n-6)(n+5)$

5) $2n^2 - 8n + 15 = 2(n-5)(n-3)$

7) $2x^3 + 2x^2 - 40x$

9) $m^2 + 6m$

11) $x^4 + 6x^3 - 40x^2$

13) $3k^2 - 6k - 24$

15) $a^3 + 9a^2$

17) $12x^2 - 116x - 40$

19) $6v^3 + 20v^2$

21) $3x^4 + 14x^3 + 8x^2$

23) $35k^2 - 400k + 500$

25) $10m^2 + 4m$

27) $3m^2 - 5m - 50$

29) $20n^3 - 12n^2$

31) $5v^3 + 7v^2 + 2v$

33) $5n^2 - 2n$

4/5

2) $3n^2 + 27n = 3n(n+9)$

4) $4n^3 - 72n^2 + 320n = 4n(n^2 - 18n + 80)$

6) $a^2 - a = a(a-1)$

8) $4x^2 + 52x + 144$

10) $n^3 - 3n^2$

12) $a^2 + 7a$

14) $a^3 + 12a^2 + 27a$

16) $2a^3 + 14a^2 + 20a$

18) $7m^2 + 10m$

20) $5x^2 - 54x + 40$

22) $7r^3 + r^2 - 6r$

24) $3b^3 - 13b^2 - 10b$

26) $3n^2 - 16n + 20$

28) $18a^2 + 204a + 480$

30) $3p^2 - 23p + 14$

32) $30n^2 + 12n$

34) $5n^3 + 31n^2 + 30n$

P.2

★ If rational expression has binomial/trinomial/polynomial

Name _____

Rational Expression Worksheet #3: YOU MUST FACTOR
Simplifying

$y^{2-1} = y^1$ ★

Simplify. Remember to factor if necessary

1. $\frac{4 \cdot 28x^3}{35x^5} = \frac{4}{5x^2}$
 $x^{3-5} = x^{-2}$

2. $\frac{5x+40}{4x+32} = \frac{5(x+8)}{4(x+8)} = \frac{5}{4}$

3. $\frac{3 \cdot 36y^2}{12y^1} = 3y$

4. $\frac{x^2+12x+20}{3x+6} = \frac{(x+10)(x+2)}{3(x+2)} = \frac{x+10}{3}$

5. $\frac{6x+30}{x^2+8x+15} = \frac{6(x+5)}{(x+5)(x+3)} = \frac{6}{x+3}$

6. $\frac{5 \cdot 25a^3b^7}{-15a^8b^3} = -\frac{5b^4}{3a^5}$

7. $\frac{5x-15}{x^2-3x} = \frac{5(x-3)}{x(x-3)} = \frac{5}{x}$

8. $\frac{38k^2m^2n}{24k^4m^1n^5} = \frac{19m}{12k^2n^4}$

9. $\frac{7x-14}{x^2-2x} = \frac{7(x-2)}{x(x-2)} = \frac{7}{x}$

10. $\frac{-16x^2y^5z}{8x^3y^2z^2} = -\frac{2y^3}{xz}$

11. $\frac{x^2-6x+8}{x^2+2x-24} = \frac{(x-2)(x-4)}{(x-4)(x+6)} = \frac{x-2}{x+6}$

12. $\frac{9x+9}{x^2+8x+7} = \frac{9(x+1)}{(x+1)(x+7)} = \frac{9}{x+7}$

13. $\frac{x^2+3x-28}{x^2-2x-8} = \frac{(x-4)(x+7)}{(x+2)(x-4)} = \frac{x+7}{x+2}$

14. $\frac{x^2-7x+6}{x^2-6x} = \frac{(x-1)(x-6)}{x(x-6)} = \frac{x-1}{x}$

15. $\frac{36a^5b^7c^6}{42a^7b^7c^2} = \frac{6c^4}{7a^2}$