

Algebra P4

Spring Final Review 1 of 3

Directions: Do not use a calculator. All answers must be simplified and exact.

Completely factor each polynomial.

1) $2x^2 + 5x + 2$

2) $9c^3d^2 - 6cd^3$

3) $16n^2 - 25$

4) $6g^4 - 14g^3 + 4g^2$

5) $144a^2 - b^2$

6) $m^2 + 10m + 25$

Simplify each expression: Your answers should contain no negative exponents and all radicals must have a rational denominator. No solving...these are not equations!!

7) $\frac{c^{-5}c^4}{c^3c^{-7}}$

8) $\sqrt{72d^6g^{100}k^8}$

9) $(7z^2 + 4 - z) - (-5 + 3z^2)$

10) $\frac{x^2 + 2x}{16} \cdot \frac{24}{x^2 - 4}$

11) $(2b^{-4})^2$

12) $\frac{6}{w^2 - 3w} \div \frac{6w + 12}{2w^2 - 2w - 12}$

13) $(3 - \sqrt{3})(2 - \sqrt{2})$

14) $\frac{2}{x+5} + \frac{3x}{x^2 + 4x - 5}$

15) $\sqrt{18} + \sqrt{50} + \sqrt{32}$

16) $\frac{m^2-1}{2m^2-m-1} \cdot \frac{2m+1}{m^2-2m+1}$

17) $\sqrt{12} + \sqrt{75}$

18) $(5m-3n)(4m-2n)$

19) $\sqrt{24x^{12}y}$

20) $\frac{x^2-7}{x-4} - \frac{3x-3}{x-4}$

21) $2\sqrt{7}(\sqrt{7}+3\sqrt{5})$

22) $\left(\frac{2a^2}{b}\right)^{-3}$

23) $-3jk^2(3jk+2k^3)$

24) $(2\sqrt{6}-\sqrt{2})(3\sqrt{8}-3\sqrt{2})$

25) $-(p-4r)-(5-r)+3(r-5)$

26) $\sqrt{25}-\sqrt{135}+\sqrt{60}-\sqrt{16}$

27) $\frac{12x^2y^2}{3x^5y} \cdot \frac{3xy}{4y}$

28) $(8x-2)(3x^2+2x-1)$

29) $(6\sqrt{2})^2$

30) $(5-\sqrt{5})^2$

31) $\frac{x+2}{x+1} + \frac{x}{x^2-1}$

32) $\frac{-5b^{-5}}{2b^4c}$

33) $(3p-2)^2$