

I. Divide each polynomial by the MONOMIAL. Must show work!

1.) $(45a^3 + 2a^2 + 63a) \div 9a$	2.) $\frac{(28r^3 + 4r^2 + 4r)}{4r}$	3.) $(48v^3 + 24v^2 - 12v)(12v^2)^{-1}$
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II. Divide each polynomial using LONG DIVISION. Must show work!

4.) $\frac{2x^2 + 3x - 14}{x - 2}$	5.) $(n^3 + 2n^2 - 5n + 12) \div (n + 4)$	6.) $(3w^3 + 7w^2 - 4w + 3) \div (w + 3)$
7.) $(2r^3 + 5r^2 - 2r - 15) \div (2r - 3)$	8.) $\frac{9d^3 + 5d - 8}{3d - 2}$	9.) $\frac{4x^3 + 5x^2 - 3x - 1}{4x + 1}$

III. Divide each polynomial using SYNTHETIC DIVISION. Must show work!

10. $(x^2 - 12x - 45) \div (x + 3)$	11. $\frac{2m^4 - 5m^3 - 10m + 8}{m - 3}$	12.) $(x^4 - 3x^3 + x^2 - 5) \div (x + 2)$
13.) $(2b^3 + b^2 - 2b + 3)(b + 1)^{-1}$	14.) $(6w^5 - 18w^2 - 120) \div (w - 2)$	15.) $\frac{3c^5 + 5c^4 + c + 5}{c + 2}$

IV. Use either long or synthetic division to complete each geometry problem. Must show work!

16.) The area of a rectangle is $2x^2 - 11x + 15$ square meters. The length of the rectangle is $2x - 5$. What is the width?	17.) A rectangle has an area of $4x^3 + 10x^2 - x + 15$ square feet. The width of the rectangle is $x + 3$ feet. What is the length?	18.) The area of a triangle is $15x^4 - 17x^3 + 13x^2 - 21x + 6$. The height is $6x - 2$. What is the length of the base?
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