

Math 080
Polynomials and Polynomial Functions Worksheet

Divide.

1.
$$\frac{3xyz - 6xy + 30y^3z^2 - 3}{6xy}$$

Divide by long division.

2.
$$\frac{x^3 + 2x^2 - 6x + 3}{x + 1}$$

3.
$$\frac{2y^5 - 4y^3 + 3y^2 - 4}{x^2 + 3}$$

Divide by synthetic division.

4. $(8x^3 + 5x^2 - 6x + 1) \div (x - 3)$

Use the remainder theorem to evaluate the function

5. $f(x) = 7x^7 + 4x^5 - 7x^2 + 2x - 5$; $f(4)$

Factor completely.

6. $-50p^2q^2 + 16pq^2 + 26p$

7. $16m^4 + 30m^2 - 8m^2 - 15$

8. $a^2 + 7a + 12$

9. $36x^4 - 23x^2 - 8$

10. $16m^2 - 92m + 60$

11. $x^2y^2 - 121z^2$

12. $2b^3 - 250$

13. $32x^3 + 108y^3$

14. $x^4 - 16$

15. $12x^2y^2 + 33xy^2 - 9y^2$

Solve.

16. $3a^2 - 30a = -75$

17. $(2x + 5) - 9 = 0$

18. A triangular tent has a height that is 4 feet less than its base. If the area of the a side of the tent is 70 square feet, find the base and height.

19. A rocket is launched from a hill 80 feet above the ocean. The launch sight is on a cliff over the ocean and the rocket will fall into the ocean. The rocket's distance, s , above sea level at any time, t , is found by the equation $s(t) = -16t^2 + 64t + 80$. Find the time it takes for the rocket to crash into the ocean.