

Math III Unit 3 Review Key

KEY:

1. -11

2. $7s^3 - 2s^2 + 8s + 10$

3. $4t^3 - 4t^2 + 9t - 8$

4. $24x^3 - 22x^2 - 5x + 6$

5. $-x^4 + 12x^3 - 34x^2 + 4x + 3$

6. $7x + 11 - \frac{6}{x^2+1}$

7. $x^2 - 3x + 5 - \frac{9}{x+3}$

8. $3y^3(y - 4)(y + 4)$

9. $(3m + 1)(9m^2 - 3m + 1)$

10. $(x^2 - 3)(3x^2 + 8)$

11. $-4b(b + 5)(b^2 - 5b + 25)$

12. $(z - 2)(z + 2)(z - 3)(z^2 + 4)$

13. $c^2(3c + 10)(6c - 1)$

14. $0, \pm\sqrt{21}$

15. $0, \pm 1, \pm 3$

16. $\pm 1, \pm 2, \pm 3, \pm 6, \pm 7, \pm 14, \pm 21, \pm 42,$

$\pm \frac{1}{3}, \pm \frac{2}{3}, \pm \frac{7}{3}, \pm \frac{14}{3}$

17. $-\frac{7}{2}, -1, 2$

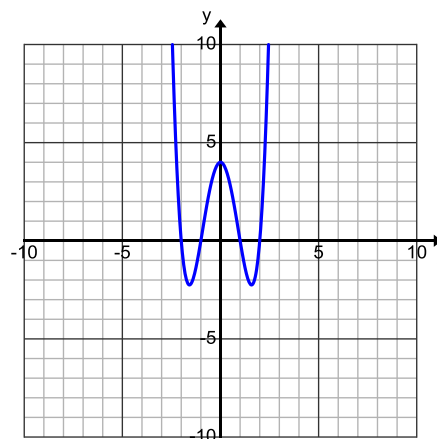
18. $\pm 1, \pm 4i$

19. $f(x) = x^3 - 2x^2 - 5x + 6$

20. $f(x) = x^3 + 4x^2 - 7x - 10$

21. $f(x) = x^3 - 2x^2 + x - 2$

22.



End Behavior: $x \rightarrow \infty, y \rightarrow \infty$;
 $x \rightarrow -\infty, y \rightarrow \infty$

Domain: $(-\infty, \infty)$

Range: $[-2.25, \infty)$

x-intercept: $\pm 1, \pm 2$

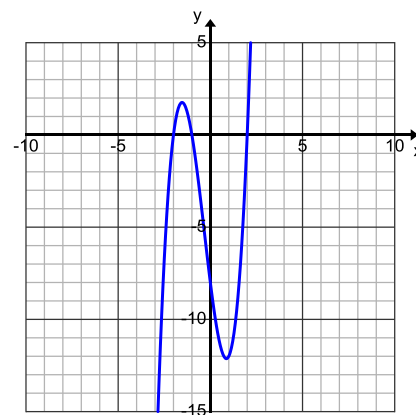
y-intercept: 4

Local Max: $f(0) = 4$

Local Min: $f(-1.581) = -2.25$

$f(1.581) = -2.25$

23.



End Behavior: $x \rightarrow \infty, y \rightarrow \infty$;
 $x \rightarrow -\infty, y \rightarrow -\infty$

Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

x-intercept: $\pm 2, -1$

y-intercept: -8

Local Max: $f(-1.535) = 1.759$

Local Min: $f(0.869) = -12.129$