Pre-Calculus
Semester 1 Exam Week Warm-ups

Day 1:

**15.** Determine the domain of the function $f(x) = \dfrac{3}{\sqrt{x-2}}$.

**(a)** $(-\infty, 2) \cup (2, \infty)$ **(b)** $[2, \infty)$ **(c)** $(-\infty, 2] \cup [2, \infty)$ **(d)** $(2, \infty)$

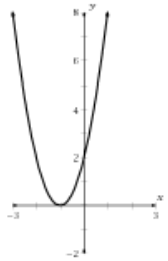
**21.** Solve the equation $x^3 - 5x^2 - 4x + 20 = 0$.

**(a)** $-2, 2, 5$ **(b)** $-5, 2i, -2i$ **(c)** $-5, -2, 2$ **(d)** $5, 2i, -2i$

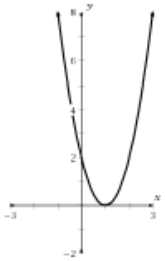
Day 2:

**20.** Graph $f(x) = 2(x+1)^2$.

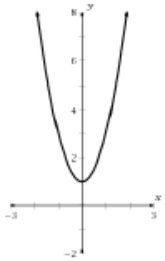
**(a)**



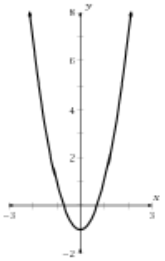
**(b)**



**(c)**

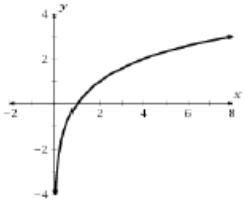


**(d)**

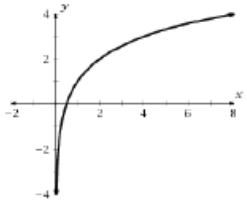


**23.** Graph $f(x) = -1 + \log_2 x$.

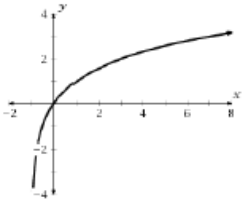
**(a)**



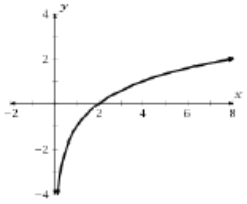
**(b)**



**(c)**



**(d)**



Day 3:

**24.** Write $\log_b \frac{y^2}{xz^5}$ in terms of $\log_b x$, $\log_b y$, and $\log_b z$.

**(a)** $2\log_b y - 5\log_b xz$ **(b)** $2\log_b y - \log_b x + 5\log_b z$

**(c)** $2\log_b y - \log_b x - 5\log_b z$ **(d)** $2\log_b y + \log_b x + 5\log_b z$

**28.** Solve $\log 10^{4x-3} = 7$.

**(a)** 2.5 **(b)** 1 **(c)** −0.4542 **(d)** No solution.

Day 4:

**18.** Find the equation in slope-intercept form of a line that passes through $(-3, 5)$ and $(6, 8)$.

**(a)** $y = \frac{1}{3}x + 6$ **(b)** $y = 3x + 10$ **(c)** $y = 3x + 14$ **(d)** $y = \frac{1}{3}x - \frac{14}{3}$

**31.** Evaluate $\sin\frac{20\pi}{6}$.

**(a)** $\frac{\sqrt{3}}{2}$ **(b)** $-\frac{\sqrt{3}}{2}$ **(c)** $\frac{1}{2}$ **(d)** $-\frac{1}{2}$

# ANSWER KEY

| | | | |
|---|---|---|---|
| 1. d | 11. a | 21. a | 31. b |
| 2. c | 12. b | 22. b | 32. a |
| 3. a | 13. d | 23. d | 33. c |
| 4. c | 14. b | 24. c | 34. c |
| 5. b | 15. d | 25. c | 35. a |
| 6. b | 16. a | 26. a | 36. b |
| 7. c | 17. c | 27. c | 37. d |
| 8. a | 18. a | 28. a | 38. a |
| 9. b | 19. d | 29. d | |
| 10. a | 20. a | 30. a | |