25 textbook sections
26 class meetings, not counting exam days
About 1 section per class meeting

General introduction

Your Name MTH 261 Bonus quiz 1 Write each problem. No calculator.
Put a box around each answer.

1. Find $\sin\left(\frac{\pi}{2}\right)$. (bad question) - not in MTH 161

$\sin\left(\frac{\pi}{2}\right) = 1$

2. Solve $\log_2(x) + \log_2(x+1) = 2$

$\log_b(p) + \log_b(q) = \log_b(pq)$

$\log_2(x(x+1)) = 2$

$2^{\log_2(x(x+1))} = 2^2$

$x(x+1) = 4$

$x^2 + x - 4 = 0$

$ax^2 + bx + c = 0$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = \frac{-1 \pm \sqrt{1-4(1)(-4)}}{2}$

$x = \frac{-1 \pm \sqrt{17}}{2}$

$x > 0$ and $x+1 > 0$

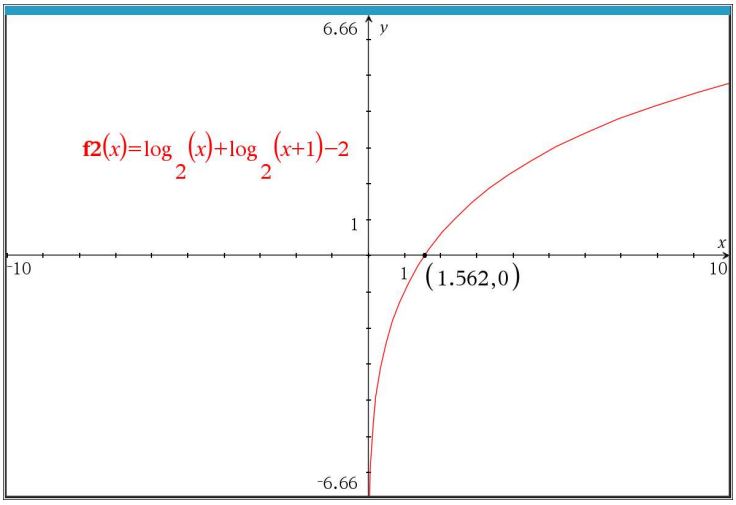
$\Rightarrow x > 0$

$\therefore x = \frac{-1-\sqrt{17}}{2}$ is an extraneous solution

$\therefore x = \frac{-1+\sqrt{17}}{2} \approx 1.56$

$\frac{-1-\sqrt{17}}{2}$ ▶ Decimal	-2.56155
$\frac{-1+\sqrt{17}}{2}$ ▶ Decimal	1.56155

The graphical solution supports our manual calculation.



3. Simplify $\dfrac{\frac{3}{4}}{\frac{2}{6}}$.

invert and multiply

$\left(\frac{3}{4}\right)\left(\frac{6}{2}\right) = \boxed{\frac{9}{4}}$

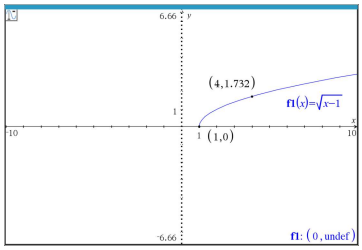
4. What is the domain of $f(x) = \sqrt{x-1}$?

$x - 1 \geq 0$

$x \geq 1$

domain $= [1, \infty)$

$= \{x \mid x \geq 1\}$



5. If x = c is a zero of the polynomial p(x), what can you say about any factor of p(x)?

Then $(x - c)$ is a factor of $p(x)$.

$p(x) = (x - c)\, q(x)$

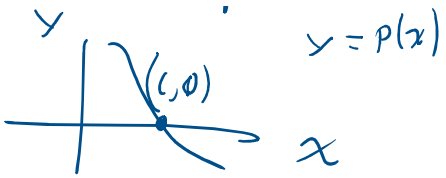
$p(c) = (c - c)\, q(c)$

$= 0 \cdot q(c) = 0$

y

$y = p(x)$

(c,0)


y
(1,0)
x
y = p(x)