Comments on and Errors in
Precalculus: A Functional Approach to Graphing and Problem Solving

Text:

p. 39, line 8 from top (Sec 1.5): ~~$y=x^2=4$~~ $y=x^2-4$

p. 43 line 5 from top (Sec 1.6): ~~$|x| = x$~~ $|x|= -x$

p. 67 line 8 from top (Sec 1.9): ~~y-axis~~ x-axis

p. 130 line 3 from bottom (Sec 2.6): $\cancel{g^\circ f = \{(0,-5),(-2,-2)\}}$ $g^\circ f = \{(0,-5),(-2,4)\}$

p. 135 #29 The domains of the parts need to be adjusted so that there are not two values for f(3). (However, this will not affect what the problem asks).

p. 135 #51 See comments on this problem in "Errors in Solutions"

p.140-141 #33-38 Second function missing

p. 141 #41 See comments on this problem in "Errors in Solutions"

p. 163 row for price 100 ~~$297,037.50~~ $279,037.50

p. 168 #19-#24 Change "c= ___" to "x= ___" (or, to match the picture, "x_0=___")

p. 186 #47 (Sec 3.4) The problem is: "A commuter train carries 600 passengers each day from a suburb to a city. It now costs $5 per person to ride the train. A study shows that 50 additional people will ride the train for each 25 cent reduction in fare. What fare should be charged to maximize total revenue." In order for this problem to match the desired solution and not involve the greatest integer function, it needs an assumption like "Assume that this relationship between riders and fare reduction can be modeled with a linear equation and do not worry about fractions of people."

p. 197 line 1 of third paragraph from top (Sec 3.5) ~~green 1~~ blue 1

p. 202 #29 (Sec 3.5) The values on the last number line shown in this problem should be switched.

p. 220 line 3 from bottom Rational functions approach lines, called *asymptotes*, ~~which~~ are…

Replace with:

Rational functions approach lines called *asymptotes*. Horizontal and oblique asymptotes are …

p. 231 Graph b. at top of page (Sec 4.2) Graph shown is not $y = \sqrt[3]{x}$ (the cube root of 4 is not 2); the general form is correct

p. 393 #57 line 7 from top (Sec 6.2) $\cancel{a}$ α

p. 401 #55 (Sec 6.3) The second sin x should be sin h.

Errors in Solutions:

1.6 #31 Solution error: ~~x<-1/5 or x>3/~~5 x<1/5 or x>3/5

2.2 #55 Solution error: $\cancel{V = 45x - \frac{1}{4}x^3}$ $V = \frac{108x - x^3}{4} = 27x - \frac{x^3}{4}$

2.2 #57 Solution error: $\cancel{f(x) = \frac{1}{24}(x^2 + 51x + 144)}$ $f(x) = \frac{2x^2 + 30x + 72}{x}$

2.3 #29 Solution error: ~~D: (-inf, 4) U (-4,4) U (4, inf)~~ D: (-inf, -4) U (-4,4) U (4, inf)

2.3 #33 Solution error: ~~-1/(x(x+h))~~ $\frac{-1}{2(2+h)}$

2.5 #27 Solution error: the portion representing -2 < x < 2 ends with an open point at 1. It should end with an open point at 2.

2.6 #9a Solution error: ~~0~~ 9/4

2.6 #37 Solution error: $\cancel{g(x) = x^2 - 1;\ u(x) = x^3 + \sqrt{x} + 5}$ $u(x) = x^2 - 1;\ g(x) = x^3 + \sqrt{x} + 5$ (Switch u(x) and g(x)).

2.6 #51 c If the problem is rephrased, "If the RANGE of V(h) is (0,6], find the domain of h(t); that is, what are the permissible values of t?", then the solution in the back of the book makes sense. As stated, the solution is:

$\cancel{0 \le t \le 1.42}$ $0 < t \le 3$

2.7 #41 The problem is: If $f(x) = x^4 - 3x^2 + 6$, find $f^{-1}(6)$. This is a poorly designed problem. This function is not one-to-one, so it does not have an inverse, unless we restrict its domain. Depending upon the domain we choose, the inverse of $f^{-1}(6)$ could be 0 (which is the "correct" answer in the solutions in the book) or $\pm\sqrt{3}$.

2.7 #57b Solution error: ~~No solution~~. $y = -\sqrt{x}$ on [0,inf)

5.3 #21 Solution error: ~~True~~ False. The equation is only true whenever $\tan\theta \neq 0$.

5.5 #39 Solve $\sec^{-1} x = \tan^{-1} x$.

The answer in the back of the book is $x = \frac{1}{2}\sqrt{2}$. It should be no solution. We can tell that $\frac{1}{2}\sqrt{2}$is wrong, because the domain of $y = \sec^{-1} x$ is (-inf,1) U (1, inf) and $x = \frac{1}{2}\sqrt{2}$ is not in the domain.

The error in the back of the textbook corresponds to an error in the solutions manual. Replace: $\cancel{\tan\theta = \sqrt{1 - x^2}}$ with $\tan\theta = \sqrt{x^2 - 1}$.

3.6 #47 ~~±2i, t3i~~ ±2i, ±3i

6.4 #35 $\cos\frac{1}{2}\theta = -\frac{5\sqrt{26}}{26}$, $\tan\frac{1}{2}\theta = -\frac{1}{5}$ (Negatives are missing in the answer in the back of the book.)

8.5 #1b Solution:

1 1 1 4	1 1 1 4
3 2 1 7	3 2 1 7
1 -3 ~~1~~ 0	1 -3 2 0