

HW #61 p 471 60-70 all 73

$$60. \frac{(y+2)^2}{36} - \frac{(x-5)^2}{4} = 1$$

$$61. \frac{(y-2)^2}{4} - \frac{(x-3)^2}{5} = 1$$

$$62. \frac{x^2}{193,600} + \frac{y^2}{279,312.25} = 1$$

$$63. \frac{\overset{(\csc x + 1)}{\sin x}}{\underset{(\csc x + 1)}{\csc x - 1}} + \frac{\sin x (\csc x - 1)}{\csc x + 1 (\csc x - 1)}$$

$$\frac{\sin x \csc x + \cancel{\sin x} + \sin x \csc x - \cancel{\sin x}}{\csc^2 x - 1}$$

$$\frac{2 \sin x \csc x}{\cot^2 x} = \frac{2 \frac{\sin x}{1} \cdot \frac{1}{\sin x}}{\cot^2 x} = \boxed{2 \tan^2 x}$$

$$64. \frac{1}{1 - \cos x} + \frac{1}{1 + \cos x} = \frac{1 + \cos x + 1 - \cos x}{1 - \cos^2 x}$$

$$= \frac{2}{\sin^2 x} = \boxed{2 \csc^2 x}$$

$$65. \ln 54 = \ln(27 \cdot 2) = \ln 27 + \ln 2$$

$$= \ln 3^3 + \ln 2 = 3 \ln 3 + \ln 2$$

$$= 3.99$$

$$66. \ln 24 = \ln(8 \cdot 3) = \ln(2^3 \cdot 3)$$

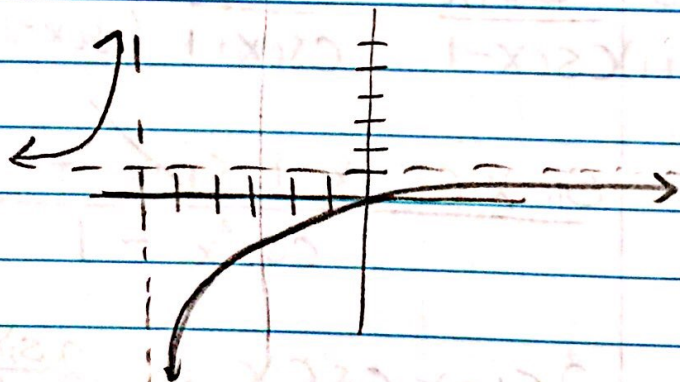
$$= \ln 2^3 + \ln 3 = 3 \ln 2 + \ln 3$$

$$\approx 3.17$$

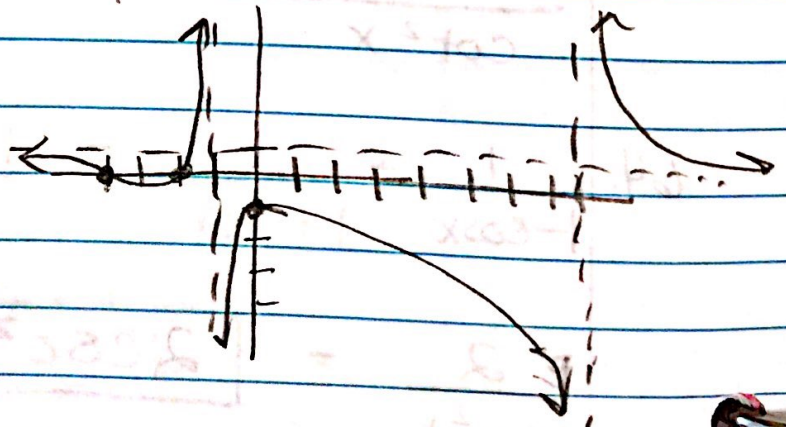
$$67. \ln \frac{8}{3} = \ln 8 - \ln 3 = 2 \ln 2 - \ln 3 \approx 0.97$$

$$68. \ln \frac{9}{16} = \ln 3^2 - \ln 2^4 = 2 \ln 3 - 4 \ln 2 \approx -0.56$$

69. HA: $y=1$
 VA: $x=-6$
 X-int: $x=0$
 Y-int: $y=0$
 D: $\mathbb{R} \ x \neq -6$



70. HA: $y=1$
 VA: $x=8$
 X-int: $x=-4, -2$
 Y-int: $y=-1$
 D: $x \neq 8$
 $\mathbb{R} \ x \neq -1$



73. $\sqrt{3z-5} = 4$ $3z-5=16$ $3z=21$ $z=7$