SET 1

(1) Solve for x:
   (a) $e^{2^x} = 5^{3^x}$

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

(2) Let $f(x) = 2\cos(4x)$. What is the amplitude? What is the period? Graph the function on the interval $[0, 4\pi]$

(3) Solve for x:

$$\tan\left(x + \frac{\pi}{2}\right) = \frac{1}{\sqrt{3}}$$

(4) Draw the appropriate right triangle and evaluate

$$\cos\left(\arcsin\left(\frac{1}{10}\right)\right)$$

SET 2

(1) Solve for x:

(a) $2^{3x+3} = 5^{2x+1}$

(b) $\ln(x+7) - \ln(x+1) = \ln(x-3)$

(2) Let $f(x) = 5\sin\left(\frac{3x}{2}\right)$. What is the amplitude? What is the period? Graph the function on the interval $[0, 4\pi]$

(3) Solve for x:

$$\cos(x) = \frac{1}{\sqrt{2}}$$

(4) Draw the appropriate right triangle and evaluate

$$\tan\left(\arccos\left(\frac{2}{7}\right)\right)$$

SET 3

(1) Solve for x:

(a) $2^{3^x} = 4^{2^x}$

(b) $\log_{10}(x+3) + \log_{10}(x+4) = \log_{10}(6)$

(2) Let $f(x) = 3\sin\left(\frac{4x}{3}\right)$. What is the amplitude? What is the period? Graph the function on the interval $[0, 3\pi]$

(3) Solve for x:

$$\sin(x) = -\frac{1}{2}$$

(4) Draw the appropriate right triangle and evaluate

$$\sin\left(\arctan(5)\right)$$