

Name: _____

Pre-Assessment 1

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Cambridge International Additional Mathematics

1 Write the following trig functions in a different form

1.1 $\tan(\theta)$

1.2 $\csc(x)$

1.3 $\cot(\theta)$

1.4 $\sec(x)$

2 Determine how many real roots the following quadratics have and solve for them

2.1 $x^2 + 2x + 1 = 0$

2.2 $x^2 + 5x - 6 = 0$

2.3 $2x^2 - 8x + 2 = 0$

3 Solve the following simultaneous equations

3.1 $3x + 6 = y$
 $6x - 8 = y$

3.2 $y = x + 2$
 $y = x^2$

4 Graph the following equations

4.1 $y = e^x$

4.2 $f(x) = \log(x)$

4.3 $y = \ln(x)$

4.4 $y = \sin(x)$

4.5 $f(x) = 5\cos(x)$

4.6 $y = \frac{1}{2}\tan(x)$

4.7 $y = \sin(5x + 4)$

4.8 $y = \cos(x) + 2$

4.9 $y = 3x - 5$

5 State the y and x intercepts of the following

5.1 $y = 6x - 1$

5.2 $f(x) = -3 + 5$

6 Solve the following equations for x

6.1 $\ln(x) = 7$

6.2 $e^{4x} = 4$

6.3 $a^{3x} = 1$

6.4 $4 = 5\log(x)$

6.5 $6\log(x + 5) = 9$

7 Complete the square and solve for x on the following problems

7.1 $x^2 + 6x = -2$

7.2 $8x^2 + 16x = 4$