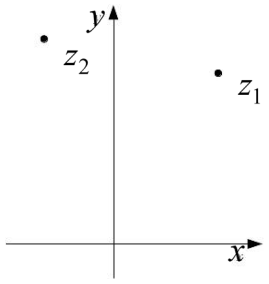
Question	Scheme	Marks
2(a)		M1 A1
		(2)
(b) (i)	$\lvert z_1 \rvert = \sqrt{3^2+5^2} = \sqrt{34}$	B1
		(1)
(ii)	$\frac{z_1}{z_2} = \frac{3+5\text{i}}{-2+6\text{i}} \times \frac{-2-6\text{i}}{-2-6\text{i}} = \ldots$	M1
	$= \frac{-6-18\text{i}-10\text{i}+30}{40}$	A1
	$= \frac{3}{5} - \frac{7}{10}\text{i}$	A1
		(3)
(c)	$\arg\frac{z_1}{z_2} = \arctan\frac{-7/10}{3/5} = \arctan\frac{-7}{6} = \ldots$ but allow $\arctan\frac{7}{6}$ for M1	M1
	$= -0.86$ or 5.42 (awrt)	A1
		(2)
		(8 marks)

Notes:

(a)

M1: Points in correct quadrants - z_1 in quadrant 1 and z_2 in quadrant 2. Must be clearly labelled either eg z_1 or 3 + 5i or correct numbers on the axes. (Accept with vector arrows.)

A1: Correct diagram, z_1 in first quadrant further away from real axis than imaginary and z_2 in second quadrant, closer to imaginary axis but above z_1 **OR** correct nos on their axes (imag axis may include i), **but not** dashes w/o any indication of scale.

Allow M1A0 for points unlabelled but diagram otherwise correct.

(b)(i)

B1: Correct modulus. Must be evaluated to $\sqrt{34}$ Question says "without using your calculator" so decimal answers can be ignored (isw) but exact answer must be seen somewhere.

(ii)

M1: Multiplies numerator and denominator by the conjugate of their denominator.

A1: Correct unsimplified (or simplified) numerator, with the i^2 correctly dealt with, and correct denominator.

A1: Correct answer. Allow as shown, $\frac{6}{10} - \frac{7}{10}\text{i}$, or 0.6 - 0.7i.

(c)

M1: For $\arctan\left(\pm"\frac{7}{6}"\right)$ (not necessarily simplified to this) or $\tan\alpha = \pm\frac{7}{6}$ $\alpha = ...$ This mark is available if answer is given in degrees. Can use $\arctan\left(\pm"\frac{6}{7}"\right)$ provided a complete method to reach the correct arg is seen.

A1: For awrt -0.86 or awrt 5.42 Must be radians.

ALT for (c):

M1: Use $\arg z_1 - \arg z_2$ correctly

A1: Correct answer