Q1. $p = 2^4 \times 2^3$

$q = 2^5$

Work out the value of $\frac{p}{q}$

You must show your working.

.....

(Total 2 marks)

Q2. (a) Express 66 as a product of its prime factors.

.....

(2)

(b) Express 132^2 as a product of its prime factors.

.....

(2)
(Total 4 marks)

M1.

Working	Answer	Mark	Additional Guidance
$\frac{2^4 \times 2^3}{2^5}$ $\frac{2^4 \times 2^3}{2^5} = \frac{2^{4+3}}{2^5} = 2^{7-5}$ $\frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 2} = 2 \times 2$ **OR** $2^4 = 16$, $2^3 = 8$, SO p = 16 × 8 =128 $2^5 = 32 = q$	2^2 or 4	2	**M1** for adding the indices in p and then subtracting the indices in the quotient **A1** for 2^2 or 4 **OR**

				Total for Question: 2 marks

M2.

	Working	Answer	Mark	Additional Guidance
(a)	$66 = 2 \times 33 = 2 \times 3 \times 11$	$2 \times 3 \times 11$	2	**M1** Successive division by 2 and 3 either by a factor tree or by repeated division **A1** cao
(b)	$132^2 = 4 \times 66^2$ $2^2 \times (2 \times 3 \times 11)^2$ **OR** $132^2 = 17424 = 2 \times 8712$ $= 2 \times 2 \times 4356 =$ $2^3 \times 2178 = 2^4 \times 1089$ $= 2^4 \times 3 \times 363 = ...$	$2^4 \times 3^2 \times 11^2$	2	**M1** $(2 \times 3 \times 11)^2$ **A1** $2^4 \times 3^2 \times 11^2$ oe **OR** **M1** $132^2 = 17424$ and at least 3 correct steps in for example the factor tree
				Total for Question: 4 marks

Resource currently unavailable.