| 1 | Work out the value of | $\frac{3^7\times 3^{-2}}{3^3}$ | |
|---|-----------------------|--------------------------------|-----------------------------------|
| | | | |
| | | | |
| | | | (Total for Question 1 is 2 marks) |
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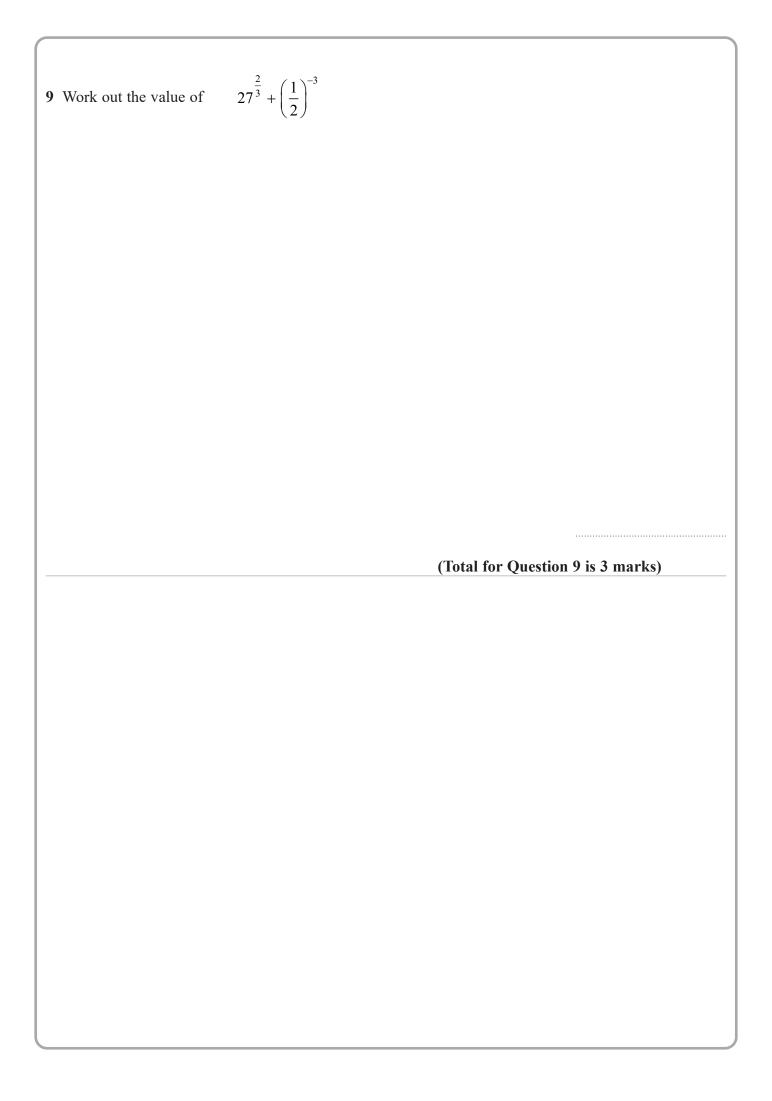
| Patrick has to work out the exact value of | $64^{\frac{7}{4}}$ | | | | |
|-------------------------------------------------------------------------|-----------------------------------|--|--|--|--|
| Patrick says, " $\frac{1}{4}$ of 64 is 16 so $64^{\frac{1}{4}} = 16$ " | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | (Total for Question 2 is 1 mark) | | | | |
| | (2000.20. Quoosso. 2.20. 2.00.2.) | | | | |
| (a) Write down the value of 70 | | | | | |
| | | | | | |
| | (1) | | | | |
| (b) Find the value of $3 \times 3^6 \times 3^{-6}$ | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| (c) Find the value of 2 ⁻⁴ | (1) | | | | |
| (c) I find the value of 2 | | | | | |
| | | | | | |
| | (1) | | | | |
| (d) Find the value of $27^{\frac{1}{3}}$ | | | | | |
| | | | | | |
| | (1) | | | | |
| | (Total for Question 3 is 4 marks) | | | | |

| 4 | $p^3 \times p^x = p^9$ | | |
|---|---------------------------------------------------------|--------------------|---|
| | (a) Find the value of x. | | |
| | | | |
| | | | |
| | | | |
| | | <i>x</i> = | |
| | | (1 | |
| | $(7^2)^y = 7^{10}$ | | |
| | (b) Find the value of y. | | |
| | (b) Find the value of y. | | |
| | | | |
| | | | |
| | | | |
| | | $y = \dots $ (1 | |
| | 100 ^a 1000 ^b 1 1 1 1 1 1 1 W | (1 | , |
| | $100^a \times 1000^b$ can be written in the form 10^w | | |
| | (c) Show that $w = 2a + 3b$ | | |
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| | | | |
| | | | |
| | | (2 |) |
| | | | |
| _ | (Total for Ques | stion 4 is 4 marks |) |
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| 5 | (a) Write down the value of $36^{\frac{1}{2}}$ | |
|---|------------------------------------------------|---------------------------------------|
| | (b) Write down the value of 23 ^o | (1) |
| | (c) Work out the value of $27^{-\frac{2}{3}}$ | (1) |
| | | |
| | | (2) (Total for Question 5 is 4 marks) |
| | | |

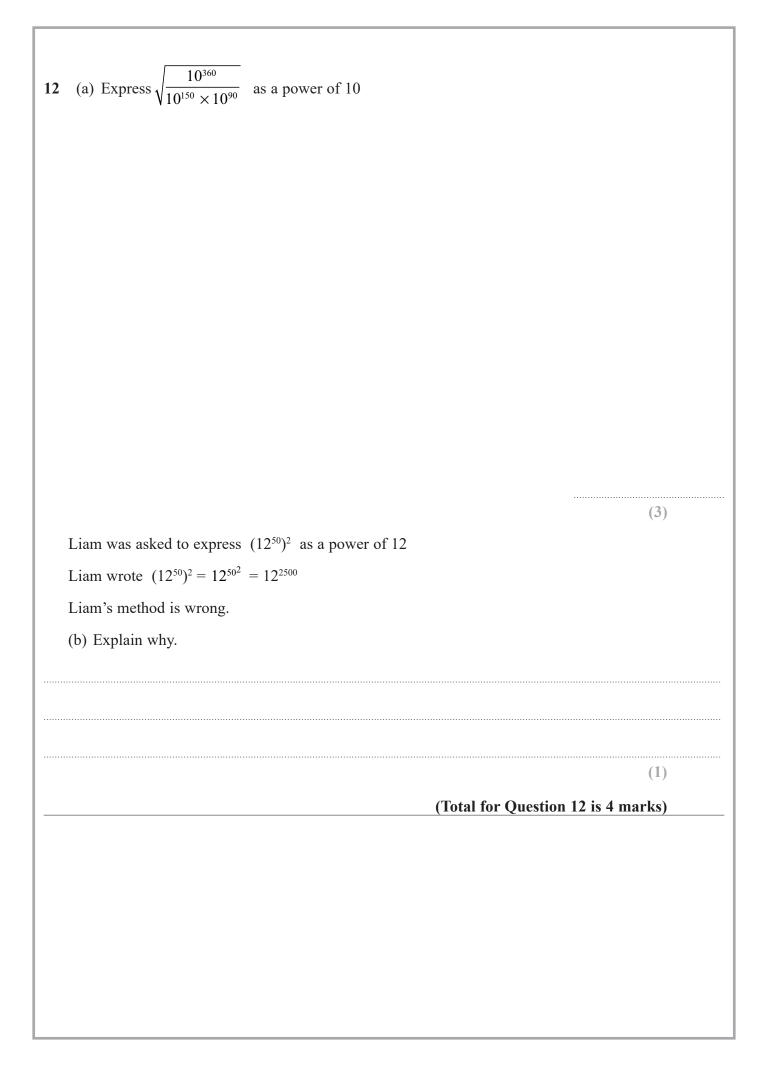
| (a) Write down the value of $100^{\frac{1}{2}}$ | | , |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (b) Find the value of $125^{\frac{2}{3}}$ | (1) | |
| | | |
| | (2) | |
| | (Total for Question 6 is 3 marks) | |
| (a) Find the value of $81^{-\frac{1}{2}}$ | | |
| (b) Find the value of $\left(\frac{64}{125}\right)^{\frac{2}{3}}$ | (2) | |
| | | |
| | (2) | |
| | (Total for Question 7 is 4 marks) | |
| | | |
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| | | |
| | (a) Write down the value of $100^{\frac{1}{2}}$ (b) Find the value of $125^{\frac{2}{3}}$ (a) Find the value of $81^{-\frac{1}{2}}$ | (a) Write down the value of $100^{\overline{3}}$ (1) (b) Find the value of $125^{\frac{2}{3}}$ (2) (a) Find the value of $81^{-\frac{1}{2}}$ (2) (b) Find the value of $\left(\frac{64}{125}\right)^{\frac{2}{3}}$ (2) |







| (a) Work out an estimate for the value of $\sqrt{63.5 \times 101.7}$ | |
|-----------------------------------------------------------------------------|----------------------|
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| | |
| | (2) |
| $(2.3)^6 = 148$ correct to 3 significant figures. | |
| (b) Find the value of (0.23) ⁶ correct to 3 significant figures. | |
| | |
| | |
| | |
| | |
| | |
| | (1) |
| (c) Find the value of 5^{-2} | |
| | |
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| | |
| | (1) |
| (Total for Ques | stion 11 is 4 marks) |
| (Total Ioi Ques | MINITED THAT KS |
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| 13 | Here is a list of five numbers. | | | | | |
|----|--------------------------------------------------------|------------------|------|------|------------|------------------------|
| | | 98 ⁵³ | 9864 | 9873 | 9888 | 9891 |
| | Find the lowest common multiple of these five numbers. | | | | | |
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| | | | | | (Total for | Question 13 is 1 mark) |
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| 14 (a) Find the value of | $\sqrt[3]{8 \times 10^6}$ | | |
|-----------------------------------|----------------------------------------------|------------------------|-------------|
| (b) Find the value of | $144^{\frac{1}{2}} \times 64^{-\frac{1}{3}}$ | | (1) |
| (c) Solve $3^{2x} = \frac{1}{81}$ | | | (2) |
| | | <i>x</i> = | |
| | | | (2) |
| | | (Total for Question 14 | is 5 marks) |
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