

LOGS-SURDS-SET-3

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|------|---|-----|----------------|-----|--------|--|---|---|---|--|--|
| 1 | <p>(a) $\log k = 2\log 3 - 5\log 2$ Find the value of k.</p> <p style="text-align: right;">$k = \dots\dots\dots [2]$</p> <p>(b) $\log_2 p = -1$ Find the value of p.</p> <p style="text-align: right;">$p = \dots\dots\dots [1]$</p> | | | | | | | | | | |
| MS-1 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 10%; text-align: center;">(a)</td> <td style="text-align: center;">$\frac{9}{32}$</td> </tr> <tr> <td style="text-align: center;">(b)</td> <td style="text-align: center;">0.5 oe</td> </tr> </tbody> </table> | (a) | $\frac{9}{32}$ | (b) | 0.5 oe | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 10%; text-align: center;">2</td> <td style="padding: 5px;">M1 for correct use of $a \log b = \log b^a$ or $\log p - \log q = \log \frac{p}{q}$</td> </tr> <tr> <td style="text-align: center;">1</td> <td></td> </tr> </tbody> </table> | 2 | M1 for correct use of $a \log b = \log b^a$ or $\log p - \log q = \log \frac{p}{q}$ | 1 | | |
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| (b) | 0.5 oe | | | | | | | | | | |
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| 1 | | | | | | | | | | | |
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| 2 | <p>(a) Find the value of n when $\log 5 + \log 3 - \log 2 = \log n$.</p> <p style="text-align: right;">$\dots\dots\dots [1]$</p> <p>(b) Find $\log_3(3^{1.4})$.</p> <p style="text-align: right;">$\dots\dots\dots [1]$</p> | | | | | | | | | | |
| MS-2 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 10%; text-align: center;">(a)</td> <td style="text-align: center;">7.5</td> </tr> <tr> <td style="text-align: center;">(b)</td> <td style="text-align: center;">1.4</td> </tr> </tbody> </table> | (a) | 7.5 | (b) | 1.4 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 10%; text-align: center;">1</td> <td></td> </tr> <tr> <td style="text-align: center;">1</td> <td></td> </tr> </tbody> </table> | 1 | | 1 | | |
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| 3 | <p>Solve the equation.</p> $3 \log x - \log 4 = 4 \log 2$ <p style="text-align: right;">$x = \dots\dots\dots$ [3]</p> | | |
| MS-3 | 4 | 3 | M2 for $\log x^3 = \log(2^4 \times 4)$ or M1 for one correct use of rules of logs |
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