**Matching Up**

Students, working in pairs or small groups, are given the cards below and asked to match up cards which have equivalent values. The twist to this activity is that the cards do not match in pairs, there being more than two cards with the same values. This often surprises students if they have not been told beforehand.

The equivalent groups do not always contain the same number of cards. One expression does not have any equivalent which requires insight and understanding to spot.

Students should stick their groups onto a large sheet of paper and be required to add explanations showing equivalences. Students can then make as many equivalent expressions as they can to match the 'lonely' one.

| | | |
|---|---|---|
| $\frac{1}{2}\log_a 36$ | $\log_a 3$ | $\log_a 30 - \log_a 5$ |
| $\log_a 3 + \log_a 2$ | $\log_a 8$ | $\log_a 24 - \log_a 3$ |
| $3\log_a 2$ | $\frac{1}{2}\log_a 9$ | $-\log_a \frac{1}{2} - \log_a \frac{1}{3}$ |
| $\log_a 12 - \log_a 4$ | $2\log_a 3 + \log_a 10$ $- \log_a 18$ | $\frac{1}{2}\log_a 64$ |

| | | |
|---|---|---|
| $\log_a 6$ | $\log_a 20 + 2\log_a 2 - \log_a 10$ | $-3\log_a \frac{1}{2}$ |
| $\log_a 4 + \log_a 2$ | $\log_a 5$ | $\frac{1}{3}\log_a 27$ |
| $\log_a 10 - \log_a 2$ | $\log_a 15 + 3\log_a 2 - \log_a 20$ | $\log_a 3 + \log_a 16 - \log_a 6$ |
| $\log_a 36 + \log_a 2^{-2}$ | $-\log_a 0.2$ | $-\log_a \frac{1}{5}$ |