Activity 1. Easiest vs. hardest

Question 1. Solve the simultaneous equations: 3a + 4b = 30a + b = 7

Question 2. Solve the equation 7 - 10(c+2) = 25.

Question 3. Factorise $d^2 - 2d - 3$.

Question 4. Calculate $24 \div 3 - (2+6) \div 4 + 5 \times 6 \div 3$.

Question 5. Calculate $\frac{4}{7} - \frac{3}{5}$.

Question 6. Calculate $\frac{4.8 \times 10^2}{0.08}$.

Question 7. I know that $-3 \le p \le 5$. Determine the maximum and minimum value of p^2 .

Question 8. I know that $938 \times 353 - 164 \times 327 - 486 = 277000$. Determine the value of $938 \times 354 - 164 \times 327 - 496$.

Question 9. An animal's heart rate is measured in 'bpm', which means 'beats per minute'. A hummingbird's heart beats 2000 times in 100 seconds. What is its average heart rate, in bpm?

Activity 2. True or False

- 1. Everybody can count to 10.
- 2. Everybody can calculate 8 5 + 2.
- 3. Everybody can calculate 42 3.
- 4. Everybody can calculate $\frac{1}{2} 1$.
- 5. Everybody can visualise simple fractions, e.g. $\frac{1}{2}, \frac{1}{3}, \frac{2}{5}$, etc.
- 6. Everybody knows how to calculate the area of a rectangle.
- 7. Everybody can round to a specified number of significant figures.
- 8. Everybody can multiply/divide decimal numbers by 10, 100 and 1000.
- 9. Everybody can, for example, use the fact that $6 \times 36 = 216$ to determine 6×37 .
- 10. Everybody can say which out of two positive numbers (written in decimal notation) is bigger.
- 11. Many students will 'expand brackets' when they shouldn't, e.g. $(a + b)^2 = a^2 + b^2$.
- 12. Many students will try less on later questions in a test, particularly if earlier questions were challenging for them.
- 13. Everybody sense-checks their final answer.
- 14. Everybody can remember what they did a few minutes ago.
- 15. Estimation is a weakness for most students.

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