

Perform the indicated operations. Show all steps. **Write a separate line for each step.**

1. $18 - 2(12 - 3^2 + 1) + 3$

2. $\left((4^2 - 13)^2 - 7\right)^2 - 1^3$

3. $\frac{20 - 4^2}{2}$

4. $20 - \frac{4^2}{2}$

5. $17 - 4(20 - 2 \cdot 3^2)$

6. $\frac{60 \div 3 \cdot 2}{12 - 3 + 1}$

7. $(30 - 2(3 + 2(7 \cdot 4 - 5^2)))$

8. Insert parentheses to make the given expression true.

$$25 - 2 \cdot 12 + 3 - 4 - 2^2 = 3$$

9. * We are at a cross road. One road leads into a dangerous swamp, the other road leads into a town. There is a pair of identical twins on the crossing. We know that one twin always tells the truth, the other twin always lies. We are allowed to ask only one yes or no question from only one brother. Is there a way to find out which road leads to town?

Answers

1. 13 2. 3 3. 2 4. 12 5. 9 6. 4 7. 12

8. $25 - 2 \cdot (12 + 3 - (4 - 2)^2) = 3$