Integers, Order of Operations and the Coordinate Plane

Grades 6–8 · Number · 6 questions · step-by-step answers at the end

Name: Date: Score: / 6

USEFUL EQUATIONS

$a - (-b) = a + b$ $(-) \times (-) = (+)$, $(-) \times (+) = (-)$ brackets → powers → × ÷ → + −

$|-7| = 7$

Questions

Show your working in the space under each question.

1. EASY Work out $-6 - 5$.

2. EASY Work out $(-4) \times (-7)$ and $(-36) \div 9$.

3. MEDIUM Work out $20 - 2 \times 3^2$.

4. MEDIUM The temperature is -8 °C and rises by 13 °C. What is it now?

5. HARD Find the value of $2x^2 - 3x$ when $x = -2$.

6. HARD A is the point $(-3, 2)$ and B is $(5, 2)$. Find the distance AB, the midpoint of AB, and the image of A after reflection in the x-axis.

Step-by-step answers

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1. Start at -6 and move 5 further left: **-11**.
2. Same signs give a positive: **28**. Different signs give a negative: **-4**.
3. Power first: 9. Then $2 \times 9 = 18$. Then $20 - 18 =$ **2**.
4. $-8 + 13 =$ **5 °C**.
5. $2 \times 4 - 3 \times (-2) = 8 + 6 =$ **14**.
6. They are level, so the distance is $5 - (-3) =$ **8**. Midpoint: **(1, 2)**. Reflection changes the sign of y: **$(-3, -2)$**.