UNIT 13 Graphs, Equations and Inequalities — Mental Tests

M 13.1 Standard Route *(no calculator)*

Calculate :

1. $6 - 14$ (– 8)
2. $-3 + 2$ (– 1)
3. $-7 - 3$ (– 10)
4. -6×-3 (18)
5. 3×-7 (– 21)
6. $-8 + (-9)$ (– 17)
7. $6 - (-2)$ (8)
8. Write down a whole number that is greater than 7 and less than 9. (8)
9. Write down a number that is less than – 2 and greater than – 4. (–3)
10. Write down a number that is greater than – 5 and less than – 3. (– 4)

M 13.2 Academic Route *(no calculator)*

Calculate:

1. $(-7) \times (-9)$ (63)
2. $(-8) - (-3)$ (– 5)
3. $(-33) \div 3$ (– 11)
4. $-2 + (-9)$ (– 11)
5. $6 + (-22)$ (– 16)
6. What is the gradient of the line with equation $y = 2x + 1$? (2)
7. What is the gradient of the line with equation $y = 6 - 3x$? (– 3)
8. Write down the integer that is greater than – 7 and less than – 5. (– 6)
9. Write down the integers that are greater than – 2 and less than 2. (– 1, 0, 1)
10. A line has gradient 5 and passes through the origin. Write down its equation. ($y = 5x$)

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M 13.3 Express Route *(no calculator)*

Calculate:

1. $(-4)^3$ (– 64)
2. $(-8) \times (-9)$ (72)
3. $(-132) \div (-11)$ (12)
4. $-6 + (-9)$ (– 15)
5. $66 - (-19)$ (85)
6. What is the gradient of the line with equation $y = 7 - 3x$? (– 3)
7. What is the gradient of the line with equation $y = \frac{3x}{5} + 2$? $(\frac{3}{5})$
8. Write down a positive integer that satisfies the inequality $x^2 \geq 5$. (3, 4, 5, ...)
9. Write down the integers that satisfy the inequality $x^2 \leq 13$. (– 3, – 2, – 1, 0, 1, 2, 3)
10. How many integers satisfy the inequality $x^2 \leq -1$? (0)

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