FINDING THE GRADIENT (RATIO)

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

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1. (2, 3) and (4, 7) | 2   2. (1, 5) and (3, 9) | 2

3. (0, 0) and (3, 6) | 2   4. (-1, 2) and (1, 6) | 2

5. (4, 1) and (6, 5) | 2   6. (2, 8) and (5, 17) | 3

7. (-3, 4) and (1, 12) | 2   8. (5, 2) and (8, 8) | 2

9. (-2, -3) and (0, 1) | 2   10. (3, 7) and (7, 15) | 2

11. (1, -2) and (4, 4) | 2   12. (-4, 5) and (-1, 14) | 3

13. (6, 3) and (10, 11) | 2   14. (2, 9) and (5, 18) | 3

15. (-3, -5) and (1, 3) | 2   16. (4, 6) and (7, 15) | 3

17. (0, 4) and (3, 13) | 3   18. (-2, 8) and (2, 16) | 2

19. (5, 1) and (8, 10) | 3   20. (3, -4) and (6, 2) | 2

21. (-1, -6) and (2, 0) | 2   22. (7, 2) and (10, 11) | 3

23. (4, 8) and (6, 14) | 3   24. (-3, 7) and (0, 16) | 3

25. (2, 5) and (5, 14) | 3   26. (1, -3) and (4, 6) | 3

27. (-4, -2) and (-1, 7) | 3   28. (6, 4) and (9, 13) | 3

29. (3, 2) and (7, 14) | 3   **30.** (-2, -8) and (1, 1) | 3

MASTER QUESTIONS

M1. A straight road rises 15 metres over a horizontal distance of 300 metres. Calculate the gradient. | 1/20

M2. A hiking trail climbs 120 metres vertically over 2 kilometres horizontally. What is its gradient? | 3/50

M3. A wheelchair ramp must have a maximum gradient of 1:12. If it rises 0.5 metres, what is the minimum horizontal length required? | 6 metres

M4. A railway track rises 8 metres over 800 metres. Express the gradient as a simplified fraction. | 1/100

M5. A roof pitch has a vertical rise of 3 metres for every 4 metres horizontally. What is the gradient? | 3/4

M6. A ski slope drops 250 metres over a horizontal distance of 800 metres. Calculate the gradient. | -5/16

M7. A drainage pipe falls 1.5 metres over 30 metres. What is the gradient? | -1/20

M8. A hill climbs 75 metres over a horizontal distance of 500 metres. Express the gradient in simplest form. | 3/20

M9. A staircase rises 2.7 metres over 15 steps with each step having a 25cm horizontal depth. Calculate the gradient. | 18/25

M10. A cycling track has a gradient of 1:20. If it climbs 12 metres, what horizontal distance does it cover? | 240 metres