Year 8 Sequences, Functions and Graphs – Mixed Practice

HappyKids.fit

Year 8 · Maths · Sequences, Functions and Straight-Line Graphs · Mixed practice · 30 questions

Name _____ **Date** _____

A. Mixed practice (mixed order)

1. Write down the gradient and the y-intercept of the line $y = 1 - 2x$.

Answer _____

2. The nth term of a sequence is $-2n - 1$. Write the first four terms.

Answer _____

3. Find the nth term of the sequence 5, 7, 9, 11, …

Answer _____

4. Write down the gradient and the y-intercept of the line $y = 1 + 3x$.

Answer _____

5. A function machine is input → × 1/2 → − 3 → output. The output is 0. Use inverse operations to find the input.

Answer _____

6. Write down the gradient and the y-intercept of the line $y = -5 - 4x$.

Answer _____

7. Find the nth term of the sequence 21, 18, 15, 12, …

Answer _____

8. Write the term-to-term rule and the next two terms: 1 1/5, 1 3/5, 2, 2 2/5, …

Answer _____

9. The nth term of a sequence is (1/4)n + 7. Write the first four terms.

Answer _____

10. Write the term-to-term rule and the next two terms: 1/2, 3/4, 1, 1 1/4, ...

Answer _____

11. A taxi charges a fixed $25 plus $4 for every kilometre. Write an equation for the cost y dollars of a journey of x km.

Answer _____

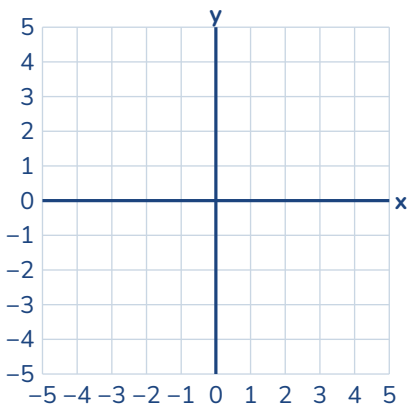
12. Write down the gradient and the y-intercept of the line y = x + 8.

Answer _____

13. A straight line passes through (−2, −11) and (3, 4). Find its gradient and its equation.

Answer _____

14. Complete a table of values for y = −x for x = −2, −1, 0, 1, 2. Plot the points on the grid and draw the line.



15. Find the nth term of the sequence 15, 10, 5, 0, …

Answer _____

16. A function machine is input → × 2/3 → + 6 → output. The output is 10. Use inverse operations to find the input.

Answer _____

17. Hana says the sequence with nth term 3n + 1 contains the number 100. Is Hana right? Explain.

Answer _____

18. The nth term of a sequence is −2n. Write the first four terms.

Answer _____

19. Bike hire company A charges y = 3x + 10 dollars and company B charges y = 5x dollars for x hours. Where do the two graphs intersect, and what does this mean? Which company is cheaper for 7 hours?

Answer _____

20. Jade says a steeper line always has a bigger y-intercept. Is Jade right? Explain.

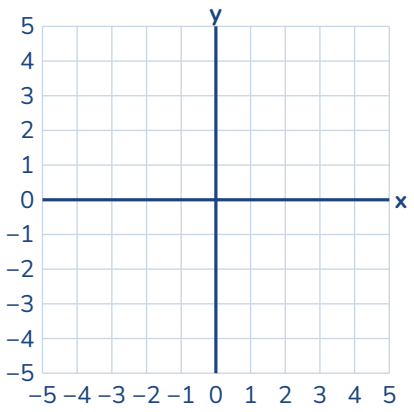
Answer _____

21. Find the nth term of the sequence 9, 11, 13, 15, ... Answer _____

22. A function machine is input → × 3/4 → − 3 → output. Find the output when the input is 0.

Answer _____

23. Complete a table of values for y = −2x for x = −2, −1, 0, 1, 2. Plot the points on the grid and draw the line.



24. Gus says the line y = 1 + 2x has gradient 1 and y-intercept 2. Explain the mistake.

Answer _____

25. Write the term-to-term rule and the next two terms: 1, 1 1/6, 1 1/3, 1 1/2, …

Answer _____

26. The nth term of a sequence is (5/2)n + 8. Write the first four terms.

Answer _____

27. A plumber charges a call-out fee of $14 plus $9 per hour. Write an equation for the total charge y dollars for x hours.

Answer _____

28. A straight line passes through (−3, 3) and (3, −3). Find its gradient and its equation.

Answer _____

29. A pattern is a row of pentagons made of sticks. Pattern 1 uses 5 pieces and each new pattern adds 4. Write the nth term and find pattern 29.

Answer _____

30. Write down the gradient and the y-intercept of the line $y = 4 + 3x$.

Answer _____