Year 9 Equations and Inequalities – Mixed Practice

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Year 9 · Maths · Equations, Formulae and Inequalities · Mixed practice · 30 questions

Name _____ **Date** _____

A. Mixed practice (mixed order)

1. Solve the simultaneous equations $2x + y = 11$ and $3x - y = 4$.

Answer _____

2. Solve $5(4x - 4) = 2(2x + 22)$.

Answer _____

3. Solve $(x + 9)/x = 4$.

Answer _____

4. Solve the inequality $8 < 3x + 2 \leq 20$.

Answer _____

5. Make a the subject of $F = ma + 10$.

Answer _____

6. Solve $2(4x + 9) = 2(3x + 14)$.

Answer _____

7. Write down the inequality in t shown on the number line.



Answer _____

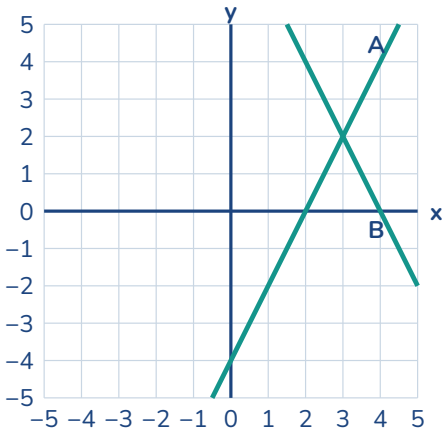
8. 2 pens and 2 notebooks cost $18. 6 pens and 2 notebooks cost $38. Find the cost of one pen and of one notebook.

Answer _____

9. Solve 10/x + 5 = 7.

Answer _____

10. Line A is y = 2x − 4 and line B is 2x + y = 8. Use the graph to solve these simultaneous equations.



Answer _____

11. Square paving slabs have sides of s metres and cost $30 per square metre. Delivery costs $25. Write a formula for the total cost C dollars of n slabs.

Answer _____

12. Solve the simultaneous equations $2x + 4y = 20$ and $x - 2y = -14$.

Answer _____

13. A train travels 120 km at an average speed of 60 km/h. Write an equation for the time t hours and solve it.

Answer _____

14. Make r the subject of $C = 2\pi r$.

Answer _____

15. A hall holds no more than 200 people. There are 12 staff, and guests arrive in groups of 12. Write an inequality for the number of groups n and find the greatest number of groups.

Answer _____

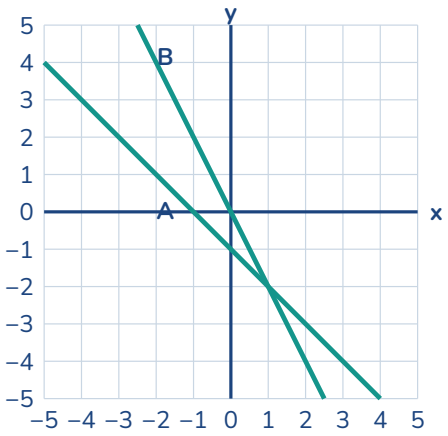
16. Solve the inequality $5x + 3 \geq 3x + 11$.

Answer _____

17. Solve $(7x - 4)/2 = -2$.

Answer _____

18. Line A is $y = -x - 1$ and line B is $2x + y = 0$. Use the graph to solve these simultaneous equations.



Answer _____

19. Kofi says that $x = 3$, $y = -2$ is the solution of the simultaneous equations $3x + y = 7$ and $x - 2y = 7$. Is Kofi right? Show how you know.

Answer _____

20. Solve the inequality $5x + 3 < 23$.

Answer _____

21. A cuboid has a square base with sides of b cm and a height of 9 cm. Write a formula for its volume V cm^3.

Answer _____

22. A rectangle is (2x + 2) cm long and (x − 2) cm wide. Its perimeter is 54 cm. Write an equation and find x.

Answer _____

23. A rectangle has sides of (x + 3) cm and 4 cm. Its perimeter must be less than 50 cm. Write an inequality and find the largest whole-number value of x.

Answer _____

24. Write down the inequality in t shown on the number line.

Answer _____



25. To solve 3x + y = 20 and x + y = 8, Lina adds the equations and gets 4x = 28. Explain the mistake and give the correct answer.

Answer _____

26. Eli says multiplying both sides of an inequality by −1 reverses the inequality sign. Is Eli right? Explain.

Answer _____

27. Solve the simultaneous equations $5x + 3y = 22$ and $2x - 5y = 15$.

Answer _____

28. Make u the subject of $s = ut + 5t^2$.

Answer _____

29. 4 apples and 1 melon weigh 1673 g. 2 apples and 1 melon weigh 1357 g. Find the mass of one apple and of one melon.

Answer _____

30. Solve $12/x = 3$.

Answer _____