

Year 9 Finals 2023

1. In a school of 600 girls and 700 boys, 10% of the girls and 20% of the boys were awarded prizes in a competition. What fraction, in simplest form, of the students were awarded with the prizes?

2. What is the value of $|12| - |-3| \times 4$?

3. A house is priced at \$180 000. A couple purchased the house by paying \$30 000 deposit and borrowing the balance from the bank. The bank repayments are \$1030 a month for 25 years.

Find the total amount they have to pay for the house.

4. A tiler charged \$750 to tile a rectangular kitchen floor. How much should be charged (at the same rate) to tile another twice as long and twice as wide?

5. What is the difference between 50% of 60% of 70 and 40% of 50% of 80 ?

6. The interior angles of a pentagon measure x , $x + 20$, $x + 40$, $x + 60$, and $x + 80$, each in degrees. Find the measure of the largest angle, in degrees.

7. Find the measure of an angle such that the sum of the measures of its supplement and its complement is 112° .

8. If there are six different pairs of socks in the drawer, what is the smallest number you could reach in and grab (without looking) to guarantee you have a matching pair?

9. What is the value of $\left(2 - \frac{1}{2}\right)\left(3 - \frac{1}{3}\right)\left(4 - \frac{1}{4}\right)\left(5 - \frac{1}{5}\right)$?

10. At night, a man who is 2 m tall stands 10 m away from a lamppost. If the man's shadow measures 4 m, how far above the ground is the light bulb in the lamppost?

11. Find the perimeter of the regular polygon with a side length of 15 and exterior angles measuring 40° .

12. How many lines of symmetry does a regular triacontagon (30-sided polygon) have?

13. A square swimming pool measures 8m by 8m. It is to be surrounded on all sides by a path of uniform width 1 m wide such that the exterior of the path forms a square. Calculate the cost of paving the path if pavers cost \$15 per square metre?

14. The length of a rectangular garden exceeds its width by 3 m. If the perimeter of the rectangle is 46 m, what is the length, in metres?

15. If the radius of a circle is doubled, what is the corresponding percent increase in the area?

16. What is the equation of y-axis?

17. The price of an item decreased by 20% to \$200. Later the price decreased again from \$200 to \$150. What is the percentage decrease from the original price to the final price of \$150?

18. The ratio of boys to girls in a school is 1:5. If there are 480 pupils altogether, how many more girls are there than boys?

19. Solve $(x \div 12) \div (15 \div 2) = 20$

20. Point B $(-1, -3)$ is the result of rotating point A through 90° about $(0, 0)$. What are the coordinates of point A?
