

**Year 7 Zonal 2024**

1. Consider:  $a = \frac{b}{c} - d$

Find the value of  $a$  if  $b = 40$ ,  $c = 0.4$  and  $d = 5$

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2. Let  $A$  = fifth triangular number

$B$  = fifth square number

$C$  = second prime number

Find  $A + B + C$

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3. A class of 23 students has 3 more boys than girls. How many girls are in this class?

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4. How many minutes elapse between 20:12 today to 21:02 tomorrow?

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5. A florist buys roses at \$0.60 apiece and sells them for \$1.80 a piece. If there are no other expenses, how many roses must be sold in order to make a profit of \$300?

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- 6 Ben can do a job working alone in 1 hour. Den can do the same job alone in 30 minutes. If they both work together, in how many minutes will the job be done?

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7. The perimeter of a square is 7.8 cm.

Find the length of the side of the square.

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8. How much change will you get from \$50 if you buy 7 bottles of juice at 95 c per bottle , 2 packets of biscuit at 60 c per packet and 4 kg of potatoes at \$1.95 per kg?

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9. Find the next number in the sequence:

1, 3, 13, 63, \_\_\_\_\_

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10. The sum of 3 consecutive whole numbers is 126. Find the smallest number.

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11. The average of five numbers is 4. Four of them are 2, 4, 5 and 6. What is the other number?

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12. A bicycle is advertised for sale at \$349.85 cash or 8 monthly repayments of \$65.55. By paying cash, how much , in dollars, you would save?

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13. A  $3\text{ cm} \times 3\text{ cm} \times 3\text{ cm}$  cube is painted and is then cut into small  $1\text{ cm} \times 1\text{ cm} \times 1\text{ cm}$  cube.

How many small cubes have 3 painted faces?



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14. Tomasi travelled 32 km from his home to a town at an average speed of 60 km/h. He arrived at the town at 9.08am. At what time did he leave home? Mention am or pm in your answer.

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15. Find  $1\frac{1}{6} \div 2\frac{3}{4}$ . Give your answer in simplified fraction.

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16. A soccer team has won 9 games out of 12 played. How many of the remaining 8 games must it win to have an 80% win record for the season?

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17. In a class of 48 children, two-thirds are girls.

What fraction of the class are boys if 3 girls and 5 boys join the class? Give your answer in simplified fraction.

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18. Find the area of a sector of a circle of radius 10 cm and centre angle of  $135^\circ$ . Use  $\pi = 3.14$

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19. Sera invests \$2400 for 2 years. The simple interest is calculated at a rate of 5% per annum.

What is the total value of the investment at the end of 2 years?

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20. A fish tank in the shape of a rectangular prism is 1m long 25 cm wide. If it holds 55L of water when full, find its height in centimetres?

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