

QUESTION 1

<p><u>QUESTION 1</u> Calculate the surface area, in m², of the outside of a cylindrical drain pipe which has a circumference of 20 cm and a length of 10 m. Round off to the nearest whole number. (pi = 3.142)</p>	<p>2 or 2 m² Units not essential.</p>
<p><u>QUESTION 2</u> Some numbers read the same after being given a half turn. What is the <u>next</u> calendar year which will read this way?</p>	<p>6009</p>
<p><u>QUESTION 3</u> Put the following in ascending order. Your answer must be fractions written with numbers, not words, e.g., write $\frac{3}{4}$ rather than 'three quarters': One half; two fifths; three tenths; one sixth; seven fifteenths; two thirds</p>	<p>$\frac{1}{6}$, $\frac{3}{10}$, $\frac{2}{5}$, $\frac{7}{15}$, $\frac{1}{2}$, $\frac{2}{3}$</p>
<p><u>QUESTION 4</u> What is the last digit (the 'ones' digit) in the calculation 999^4</p>	<p>1</p>
<p><u>QUESTION 5</u> Unjumble these words which are used in maths: AGODNLAI SULP TAREEENUMMS LBAAEIVR</p>	<p>DIAGONAL PLUS MEASUREMENT VARIABLE</p>
<p><u>QUESTION 6</u> The co-ordinates of two vertices of a square are (2,2) and (5,6). Find two pairs of integer co-ordinates which are the other vertices of the square.</p>	<p>Must have two sets of co-ordinates (6, -1) and (9,3)</p>

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<p><u>QUESTION 7</u> Jim bought a pressure cooker for \$60. Somehow he did not find it useful and so when a friend Ariana offered him \$70 he sold it to her. However, he felt bad after selling it and decided to buy it back for \$80. After having bought it once again he felt that he did not really need the cooker and finally sold it on TradeMe for \$90. How much profit or loss did he make? (You must state 'profit' or 'loss' in your answer)</p>	<p>\$20 profit</p>
<p><u>QUESTION 8</u> A bag contains two-thirds as many 20-cent coins as it does 50-cent coins, five times as many 10-cent coins as 20 cent coins, and half as many 5-cent coins as 10-cent coins, making a total of \$6.30 in the bag. How many 10-cent pieces are in the bag?</p>	<p>20</p>
<p><u>QUESTION 9</u> Jonty's grandfather was born last century and before the beginning of the Second World War. In which year was Jonty's grandfather born? The year the grandfather was born is the square of a whole number.</p>	<p>1936</p>
<p><u>QUESTION 10</u> How many times does a clock strike in one 24-hour day?</p>	<p>156</p>
<p><u>QUESTION 11</u> 30 players participate in a singles tennis tournament. If a player is eliminated as soon as he/she loses a match, how many matches are required to determine the winner?</p>	<p>29</p>
<p><u>QUESTION 12</u> Jeff runs the first half of a race at 5 km/hr. Then he picks up his pace and runs the last half of the race at 10 km/hr. What is Jeff's average speed on the course?</p>	<p>$6\frac{2}{3}$ or 6.67 or 6.667 etc km/hr. Units not essential.</p>
<p><u>QUESTION 13</u> The second digit of a two-digit number is smaller than its first digit by 4. If the number is divided by the sum of the digits, the quotient is 7. What is the number?</p>	<p>84</p>
<p><u>QUESTION 14</u> A circular table has a radius of 160 cm. It is covered by a table cloth with a radius of 240 cm. How many times larger than the area of the table is the area of the table cloth?</p>	<p>$\frac{9}{4}$ or $2\frac{1}{4}$ or 2.25</p>

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<p>QUESTION 15 There is a number which is very peculiar. This number is three times the sum of its digits. What is the number?</p>	<p>27</p>
<p>QUESTION 16 Maia was playing marbles with her friend John and I heard her say to him, "If you give me one of your marbles I'll have as many as you." John replied, "If you give me one of your marbles, I'll have twice as many as you." Find out how many marbles each had.</p>	<p>Maia = 5 John = 7</p>
<p>QUESTION 17 Larry's flight leaves Sydney at 1:00 p.m. on Thursday 9th October. What time and what day will Larry get to New York City? (The time must be labelled a.m or p.m.) New York City is 12 hours behind Sydney. The flight from Sydney to Los Angeles takes 14 hours. Larry's layover in Los Angeles is 2 hours, and the flight from Los Angeles to New York city is 5 hours.</p>	<p>Thursday 9th October 10:00 p.m. (Must have all three parts correct)</p>
<p>QUESTION 18 Mr McMathematical built a machine to accept any number and spit out another number at the end. The original number is first divided by one third, the result is doubled, and the positive square root is then taken of the answer. This result is multiplied by 25 and then 12 is added. What number was fed into the machine if the number 312 is spat out?</p>	<p>24</p>
<p>QUESTION 19 A family I know has several children. Each boy in this family has as many sisters as brothers but each girl has twice as many brothers as sisters. How many boys and how many girls are there?</p>	<p>4 boys 3 girls</p>

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QUESTION 20

Three different clocks show the time to be ten minutes to nine, seven minutes to nine, and six minutes past nine. One clock is 4 minutes out, another 7 minutes out, and the remaining clock is 9 minutes out. What is the correct time?

08:57 or "Three minutes to nine" etc