








Contents



sample

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Addition of Fractions with Different Denominators

Date: _____

sample

 Do the calculations.

1. $\frac{2}{5} + \frac{4}{7} =$ _____

2. $\frac{1}{3} + \frac{3}{4} =$ _____

3. $4\frac{7}{10} + 2\frac{4}{5} =$ _____

4. $1\frac{5}{6} + 2\frac{3}{10} =$ _____

5. $10\frac{5}{12} + 5\frac{1}{4} =$ _____

6. $\frac{5}{8} + \frac{1}{4} + \frac{1}{2} =$ _____

7. $3\frac{3}{5} + 1\frac{9}{10} + 4\frac{1}{2} =$ _____

8. $4\frac{2}{9} + \frac{5}{6} + 6\frac{1}{2} =$ _____

 **Exam Tips**

Reduce all the answers to their simplest form.

 Solve the problems. Show your working.

9. My brother was $1\frac{1}{5}$ m tall two years ago. Now, his height has increased by $\frac{3}{10}$ m. What is his height now?

10. Yoyo is making drinks for the party. She is mixing $1\frac{3}{4}$ L of soda and $\frac{1}{2}$ L of milk. What is the total amount of drinks she has made?



11. Mrs. Lam made a rectangular curtain. Its width is $1\frac{4}{5}$ m and its length is $1\frac{1}{4}$ m longer than its width. What is its length?

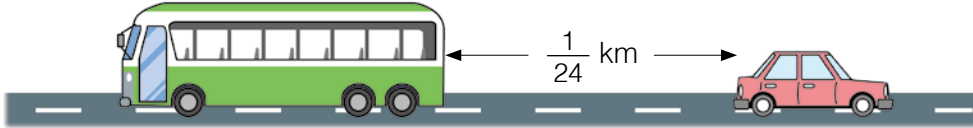
Note When performing addition of mixed numbers, calculate the whole number parts and the fraction parts separately.

12. Mandy practised piano for $1\frac{11}{12}$ hours today. Yesterday, she practised $\frac{7}{15}$ hour more than today. For how many hours did she practise piano in these two days?

13. Fanny baked 32 biscuits. Derek ate 7 biscuits and Peter ate $\frac{3}{16}$ of all the biscuits.

They ate _____ of all the biscuits. (Give your answer in fraction)

14.



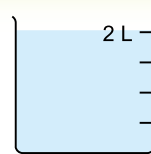
The original distance between a coach and a car was $\frac{1}{24}$ km. The two vehicles travelled in opposite directions. The coach travelled for $8\frac{1}{6}$ km and the car travelled for $10\frac{5}{8}$ km. What is the distance between the coach and the car now? (Show your working)

Advanced Level

15. Helen used the water in the measuring cup to fill up the two cups as shown on the right. She then added some more water to the measuring cup until it reached 2 L. How many litres of water were added?



(Write the letter next to the answer in the)



Capacity : $\frac{1}{3}$ L



Capacity : $\frac{2}{5}$ L



A. $\frac{11}{15}$ L

B. $1\frac{4}{15}$ L

C. $2\frac{1}{3}$ L

D. $2\frac{2}{5}$ L

16. If $\star + \blacksquare = 2$, then $3\star + 4\blacksquare = ?$ (Write the letter next to the answer in the)

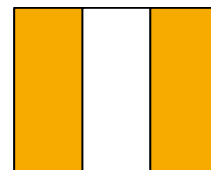
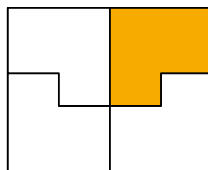
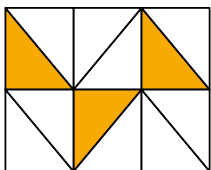
A. 7

B. 12

C. 24

D. 32

17. The following three are of the same size. Each stands for 1.

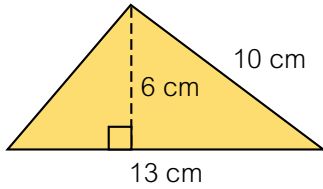


The sum of the coloured areas is _____ . (Give your answer in fraction)



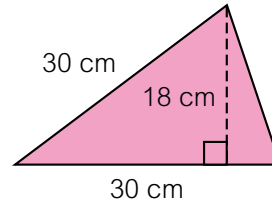
Find the areas of the following triangles.

1.



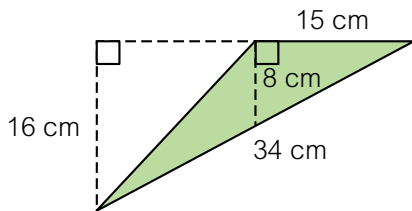
Area: _____ cm²

2.



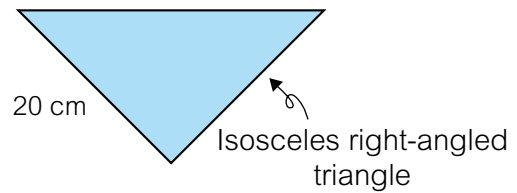
Area: _____ cm²

3.



Area: _____ cm²

4.



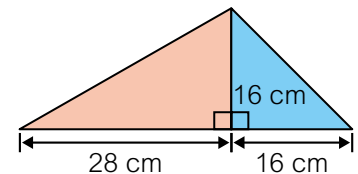
Area: _____ cm²

Solve the problems. Show your working.

5. The area of a triangle is 33 m². Its base is 6 m. What is the corresponding height?

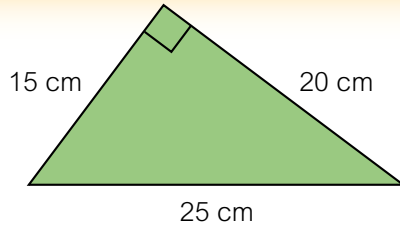
6. Joanna used two pieces of triangular coloured paper to form the bigger triangle on the right. What is the area of the bigger triangle?

Note Area of a triangle = $\frac{\text{Base} \times \text{Height}}{2}$
(where the base and the height must be perpendicular)



7. The base of a triangular canvas is 2 m. Its height is 3 times its base. What is the area?

8.



- (a) The above figure is a/an ✨ equilateral / isosceles / right-angled triangle. (✨ Circle the answer)
- (b) What is the area of this figure? (Show your working)

Exam Tips

Carefully determine the base of the triangle and the corresponding height.

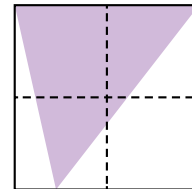
Advanced Level

9. The three sides of a right-angled triangle are 10 cm, 24 cm and 26 cm respectively. What is its area? (Write the letter next to the answer in the)

- A. 120 cm^2 B. 130 cm^2 C. 240 cm^2 D. 312 cm^2

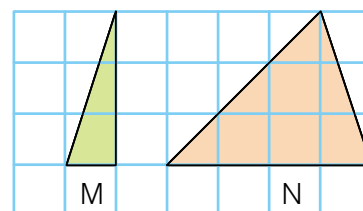
10. The figure on the right is formed by four squares with 4 cm sides. What is the area of the coloured triangle? (Write the letter next to the answer in the)

- A. 16 cm^2 B. 28 cm^2
 C. 32 cm^2 D. 54 cm^2



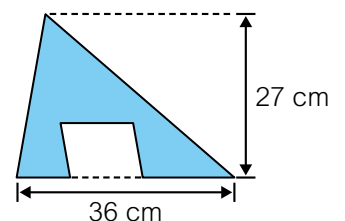
11. In the picture on the right, if the area of triangle M is 48 cm^2 , what is the area of triangle N? (Write the letter next to the answer in the)

- A. 12 cm^2 B. 96 cm^2
 C. 144 cm^2 D. 192 cm^2



12. In the figure on the right, both the base and the height of the bigger triangle are 3 times that of the parallelogram. What is the area of the coloured part?

Answer: The area of the coloured part is _____ cm^2 .



Analysis of Common Questions in Public Exam

Calculation

(Exercise 4 – Q1)

1. $1\frac{3}{4} - 2\frac{3}{10} + 1\frac{3}{5} = \square$

(Exercise 13 – Q6)

2. $3\frac{1}{8} \times 2 \times \frac{3}{5} = \square$

Smart Tactics

In mixed operations of addition and subtraction of fractions, you can change the order of operations to calculate addition first then subtraction. Remember to move the operation symbol and the fraction together.

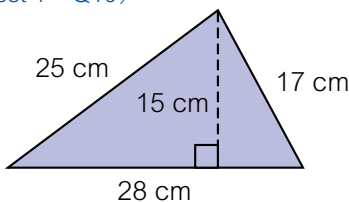
Smart Tactics

In multiplication of fractions, change the mixed numbers to improper fractions first.

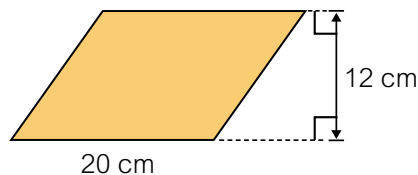
Sequencing

(Test 1 – Q10)

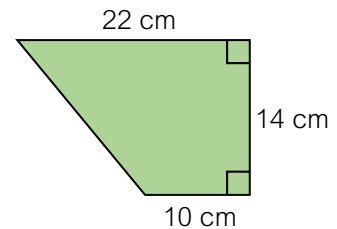
3. A



B



C



Arrange the figures according to their areas from the largest to the smallest.

Answer: _____, _____, _____
(largest) (smallest)

Smart Tactics

Identify the types of shapes carefully. Use the correct formulae to calculate their areas. Meanwhile, note that the answers to this question should be letters instead of numerical values.

(Exercise 9 – Q10)

4. The following table shows the number of views of three videos on the Internet.

Video	Number of views
Baby loves laughing	932 570
Health tips	906 723
Aerobic dance	960 182

Smart Tactics

Round off the numbers of views to the nearest ten thousand for easy comparison. Also, note that the answers to this question should be the numbers of views instead of the names of the videos.

Arrange the numbers of views of the videos from the smallest to the largest.

Answer: _____, _____, _____
(smallest) (largest)

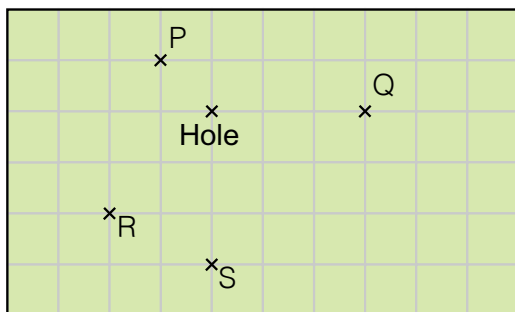
Analysis of Common Questions in Pre-S1

sample

Multiple choice (Section A)

(Exercise 1 – Q12b)

1.



Smart Tactics

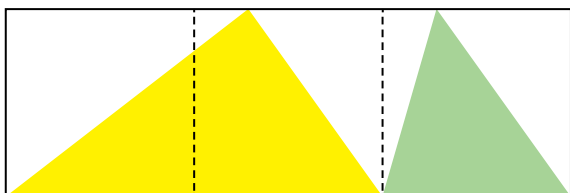
The question gives the direction of the ball being pushed instead of the relative direction of the person to the hole. Students have to think backwards to realise that the answer is opposite to the given direction.

In the picture, P, Q, R and S were four people playing a game of pushing the ball. They had to push their balls into the hole. One of them pushed the ball north-east and the ball went into the hole. Who pushed the ball that went into the hole? (Write the letter next to the answer in the)

- A. P B. Q
C. R D. S

(Exercise 6 – Q11)

2. The following figure is formed by three squares of the same size. The area of the green triangle is 72 cm^2 . What is the area of the yellow triangle? (Write the letter next to the answer in the)



Smart Tactics

From the lengths of the sides of the squares, we know that the base of the yellow triangle is 2 times that of the green one, and the two triangles have the same height. Make use of the information to find the relationship between the area of the yellow triangle and that of the green triangle.

- A. 36 cm^2
B. 72 cm^2
C. 108 cm^2
D. 144 cm^2

(Exercise 9 – Q11)

3. One of the staff of a logistic company rounded off the amount in an order to the nearest ten thousand and the result was \$1 160 000. Which of the following might be the amount? (Write the letter next to the answer in the)

- A. \$1 630 980
B. \$1 156 270
C. \$1 150 690
D. \$1 062 300

Smart Tactics

Round off the options to the nearest ten thousand and see which number's approximation is 1 160 000.

(Exercise 3 – Q14)

1. When Dan was calculating a multiplication expression, he made the multiplicand 4 times the original and the multiplier $\frac{1}{6}$ of the original. How many times of the original product is the new product? (Write the letter next to the answer in the)

A. 6 times of the original product

B. $\frac{1}{4}$ of the original product

C. $\frac{2}{3}$ of the original product

D. $1\frac{1}{2}$ times of the original product

! Mind the Trap

The question does not clearly state what the multiplier and the multiplicand are. Students are easily confused and therefore fail to find the relationship between the new product and the original product.

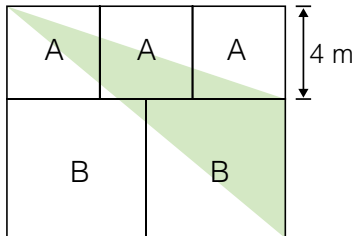
Sorting It Out

Write the multiplication expression directly.

$$\begin{aligned} \text{multiplicand} \times 4 \times \text{multiplier} \times \frac{1}{6} &= \text{multiplicand} \times \text{multiplier} \times 4 \times \frac{1}{6} \\ &= \text{multiplicand} \times \text{multiplier} \times \frac{2}{3} \\ &= \text{original product} \times \frac{2}{3} \end{aligned}$$

(Exercise 5 – Q11)

2. The following figure is formed by 3 squares A and 2 squares B. The coloured part is a triangle. What is the area of the triangle?



! Mind the Trap

The length of the side of square B is not given in the figure so that students fail to find the base and the height of the triangle to calculate the area.

Answer: The area is _____ m².

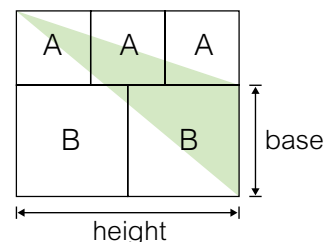
Sorting It Out

From the figure, we can see that 3 times the length of one side of square A is equal to 2 times the length of one side of square B. Make use of this information to find the base and the height of the triangle.

$$\begin{aligned} \text{Base of the triangle} &= \text{length of one side of square B} \\ &= \text{length of one side of square A} \times 3 \div 2 \\ &= 4 \times 3 \div 2 \end{aligned}$$

$$\begin{aligned} \text{Height of the triangle} &= \text{length of one side of square A} \times 3 \\ &= 4 \times 3 \end{aligned}$$

$$\frac{(4 \times 3 \div 2) \times (4 \times 3)}{2} = 36 \quad \text{Area of the triangle is } 36 \text{ m}^2.$$



1

The following is an expression of adding a 1-digit number to an 8-digit number. Write the digits represented by A and B respectively.

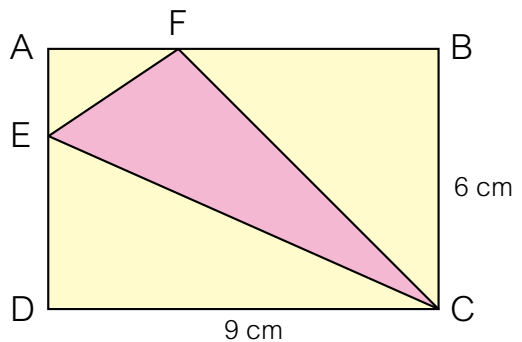
$$AA\ AAA\ AAA + B = B00\ 000\ 000$$

A = _____

B = _____

2

In the figure on the right, both triangles BCF and CDE and quadrilateral AFCE occupy $\frac{1}{3}$ of the area of the whole figure respectively. What is the area of the pink part?



Answer: _____ cm²

3

$$\frac{1}{6} = \frac{1}{M} - \frac{1}{N}$$

M = _____

N = _____