

Skill Set 1 - Fraction of remainder (Whole Numbers)

Samli harvested some durians in his plantation. He sold $\frac{1}{4}$ of the durians and gave $\frac{1}{5}$ of the remainder to his family. He had 192 durians left. How many durians did he harvest?

Skill Set 2 - Equality of different fractions (Whole Numbers)

There are two boxes of erasers. $\frac{3}{5}$ of the number of erasers in the smaller box is equal to $\frac{1}{5}$ of the number of erasers in the bigger box. There are 50 more erasers in the bigger box than in the smaller box. What is the total number of erasers in the two boxes?

Skill Set 3 Different items, values and quantities (Whole Numbers)

Joanne baked some butter and chocolate cakes. $\frac{3}{5}$ of the cakes baked were butter cakes. For each butter cake, 50g of sugar was used. For each chocolate cake, 75g of sugar was used. The total amount of sugar used was 1200g. How many butter cakes did Joanne bake?

Skill Set 4 Before and After (Constant Difference) (Whole Numbers)

The number of basketballs in a shop was $\frac{3}{7}$ the number of soccer balls. After 21 soccer balls and 21 basketballs were sold, the number of basketballs was $\frac{1}{3}$ the number of soccer balls. How many soccer balls were there in the beginning?

Skill Set 5 – More with less (Whole Numbers)

A farmer has some fertilizer to fertilize his plants. If he uses 2g of fertilizer per plant, he will be able to fertilize 40 more plants than if he uses 3g of fertilizer per plant. What is the mass of fertilizer that the farmer has?

Skill Set 6 – Equal Change (Whole Numbers)

May and Philips have some money in their piggy bank. Philips has more money than May and May has \$20 in her piggy bank. They each save \$1 per day. How many days does it take for May's amount in her piggy bank to be the same as the amount Philips had in the beginning if Philips will have \$80 by then?

Skill Set 7 – 2 Unknowns and 2 set of information (Whole Numbers)

In a restaurant, Paul's family paid \$155 for 2 steaks and 3 chicken chops. William's family paid \$210 for 4 steaks and 2 chicken chops. Find the cost of 1 steak.

Skill Set 8 – Different proportion of usage (Whole Numbers)

Kate prepared some croissants and sandwiches for a party. The number of croissants prepared was thrice the number of sandwiches. At the party, 1 croissant was eaten for every 2 sandwiches that were eaten. 100 croissants were left. How many croissants did Kate prepare for the party?

Skill Set 9 - Change in quantity of comparison (Whole Numbers)

There are air conditioners and fans in a warehouse. If 50 fans are removed from the warehouse, there will be 6 times as many air conditioners as fans in the warehouse. If 50 additional fans are placed in the warehouse, the number of fans in the warehouse will be $\frac{1}{2}$ the number of air conditioners. Find the number of air conditioners in the warehouse.

Skill Set 10 – During and After (Whole Numbers)

Gary and Earl had 560 cards together. During a competition, both Gary and Earl lost some of their cards. Earl lost 30 cards more than what he had left. Gary lost 200 more cards than Earl. The amount of cards Earl had left is $\frac{1}{3}$ the number of cards Gary had left. Find the number of cards Gary had at first?

Skill Set 11 – Traveling towards each other (Speed)

Angela started her journey from Malacca to Penang traveling at a speed of 80 km/h. Betty drove from Penang towards Malacca at a speed of 120 km/h. Both started their journey at 6 am. If the distance between Malacca and Penang is 500km, find the time when they met each other.

Skill Set 12 – Inverse proportion (Speed)

Town A and Town B is 360 km apart. Jack traveled from Town A to Town B. He traveled the first $\frac{1}{3}$ of his journey at a certain speed and the remaining of the journey at twice the speed. He took 4 hours in total to reach Town B. Find the traveling speed of Jack for the remaining $\frac{2}{3}$ of the journey.

Skill Set 13 - Overtaking (Speed)

Benjamin and Jason started their journey from the same starting point towards the company headquarters at 10 am. Benjamin was traveling at a speed of 70 km/h while Jason was traveling at a speed of 100 km/h. When Jason reached his destination, Benjamin was still 150 km away.

Find

- (a): the time when Jason reached his destination.
- (b): the distance from the starting point to the destination.

Skill Set 14 – Constant difference (Patterns)

Sequence number	Value
1	3
2	5
3	7
4	9
5	11
6	13
7	15

(i): Find the value for Sequence number 10

(ii): In which sequence number will the value be 101?

Skill Set 15 – Square of number (Patterns)

Length of square	Area/ cm ²
3	9
4	16
5	25
6	36
7	49

(i): Find the area of a square with a length of 12 cm.

(ii): What is the length of a square with an area of 324 cm²?

Skill Set 16 – 1, 3, 6, 10 and 15 sequence pattern (Patterns)

Sequence number	Value
1	1
2	3
3	6
4	10
5	15
6	
7	

(i): Find the value for Sequence number 6 and 7

(ii): Find the Sequence number that corresponds to a value of 820.

Skill Set 17 – Increasing difference (Patterns)

Sequence number	Value
1	3
2	7
3	13
4	21
5	
6	

- (i): Find the value for Sequence number 5 and 6.
(ii): Find the Sequence number with the value of 507.

Skill Set 18 - % change and change in total quantity (Percentage)

There were 200 students in the school hall. 56 more boys entered the hall and 20% of the girls left the hall. As a result, the total number of students in the hall increased by 20%. How many boys were there in the hall at first?

Skill Set 19 – Comparing % between different items (Percentage)

There were 40% more chickens than cows at a farm. After 15% of the chickens were sold and 60 cows were bought, there were 16 more chickens than cows. How many chickens were there in the farm at first?

Skill Set 20 – Comparing numerators (Percentage)

Crystal, Cindy, and Clarisse have \$195 in total. 30% of Crystal's money is equal to 20% of Cindy's money. Clarisse has \$50 less than Crystal. How much money do Crystal and Cindy have altogether?

Skill Set 21 – More with less (Percentage)

Raj bought some bottles of oil for \$80. If he is given a 20% discount, he will be able to buy 2 more bottles for the same amount of money. What is the price of a bottle of oil?

Skill Set 22 – Before and After (Ratio)

The ratio of \$1 coins to 50 cents coins in Paul's piggy bank was 8:3. After Paul added an equal number of \$1 coins and 50 cents coins into the piggy bank, the ratio of \$1 coins to 50 cents coins became 2:1. There were 150 coins in Paul's piggy bank in the end. How many \$1 coins were there in his piggy bank at first?

Skill Set 23 - % and ratio combination (Ratio)

After the first round of game, the points that Team A had was $\frac{8}{13}$ that of the total points scored by Team A and Team B. In the second round, Team A gained an additional 5 points and the points that Team B had increased by 20%. The total points of Team A and Team B had after the two rounds were 75. How many points did Team A score after the first round?

Skill Set 24 – Fixing an end ratio (Ratio)

Poh Cheng kept some marbles in a tin. The ratio of red to blue marbles was 6:5. After 15 of the red marbles were removed and the number of blue marbles was doubled, the ratio of red to blue marbles was 9:20. How many red marbles were there at first?

Skill Set 25 – Before and After (Changing difference and total) (Ratio)

In a box, the ratio of the number of sweets to the number of chocolates was 2:9. After 10 sweets and 30 chocolates were removed, the ratio of sweets to chocolate was 1:6. How many sweets were there in the jar at first?

Skill Set 26 – Algebra in problem sums (Algebra)

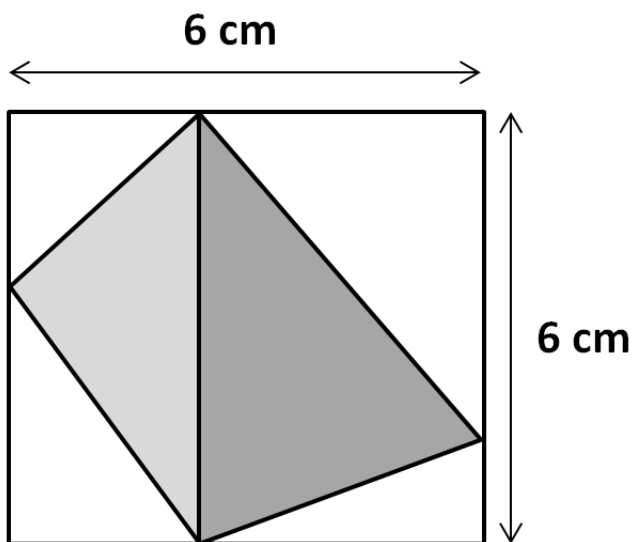
Thomas, Alvin, and Peter have a collection of stamps. The average number of stamps Thomas and Alvin have is 3y. Thomas has twice as many stamps as Alvin and Peter has $\frac{1}{2}$ the number of stamps as Alvin. Find the average number of stamps Thomas and Peter have.

Skill Set 27 – Change in Average from exclusion (Average)

The average score in a class for a test was 60. If the scores of 2 of the boys were excluded, the average score would be 62. The average score of the 2 boys was 47. How many students were there in the class?

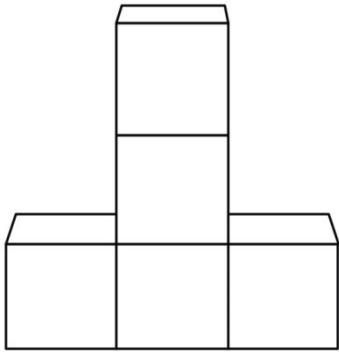
Skill Set 28 – Unknown height (Area)

Find the total area of the shaded parts in the below figure.



Skill Set 29 – Painted cubes (Area)

The figure below is made up of 5 identical cubes. The length of each cube is 2 cm. The figure is painted red. Find the total area that is painted red.



Answers

Q1	320	Q2	100	Q3	12	Q4	147	Q5	240g
Q6	30	Q7	\$40	Q8	120	Q9	300	Q10	430
Q11	8:30am	Q12	120 km/h	Q13	3pm; 500km	Q14	21;50	Q15	144;18
Q16	21;28;40	Q17	31;43;22	Q18	120	Q19	560	Q20	\$175
Q21	\$10	Q22	80	Q23	40	Q24	60	Q25	20
Q26	2.5y	Q27	15	Q28	18 cm ²	Q29	88 cm ²		