

Week 9

This week in a nutshell:

Skills from the previous weeks are now used to get a specific answer; in coming weeks these will be applied to scenario type problems where understanding and fluency will be critical.

Question 1: Fraction of a quantity

Question 2: Changing the subject

Question 3: Percentage of an amount

Question 4: Angles at a point

Question 5: 3D objects

There is an excellent opportunity to reinforce skills such as the interchangeability of fractions and percentages this week. The development of slightly more abstract algebra skills will advance over the coming weeks so be sure to check understanding at this stage. The fact based questions could be used to enhance mathematical literacy.

This week's ideas for class discussion include:

Question 1: Fraction of a quantity

- How could we use diagrams to visualise our method here?

Question 2: Changing the subject

- How is changing the subject related to solving an equation? How is it different?

Question 3: Percentage of an amount

- How is this related to finding a fraction of a quantity?
- How important is it to use equivalent fractions/decimals? Does this make our calculations easier?

Question 4: Angles at a point

- Why do we need to be certain that line segments meet "at a point"?

Question 5: 3D objects

- If a 3D object has identical faces that are regular polygons it is said to be a Platonic solid. How many of these can you find?

Week 9: Day 1

1) **Work out:**

a) $\frac{1}{2}$ of 18

b) $\frac{1}{3}$ of 27

2) **Make x the subject:**

a) $x + b = 7$

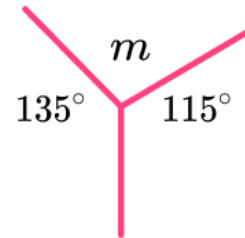
b) $21 - x = n$

3) **What is:**

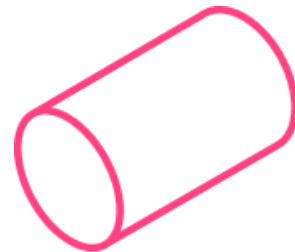
a) 25% of 40?

b) 50% of 62?

4) **Work out the size of angle m .**



5) **What is the mathematical name for this 3D object?**



Week 9: Day 1 Answers

1) Work out:

a) $\frac{1}{2}$ of 18
9

b) $\frac{1}{3}$ of 27
9

2) Make x the subject:

a) $x + b = 7$
 $x = 7 - b$

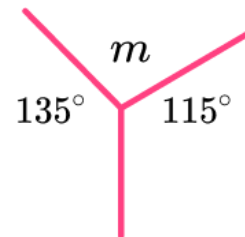
b) $21 - x = n$
 $x = 21 - n$

3) What is:

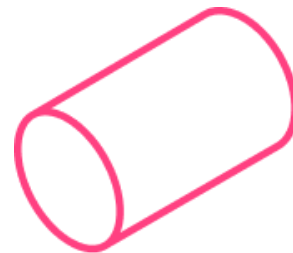
a) 25% of 40?
10

b) 50% of 62?
31

4) Work out the size of angle m .
 110°



5) What is the mathematical name for this 3D object?
Cylinder



Week 9: Day 2

1) **Work out:**

a) $\frac{1}{5}$ of 35

b) $\frac{2}{3}$ of 24

2) **Make x the subject:**

a) $3x + 7 = z$

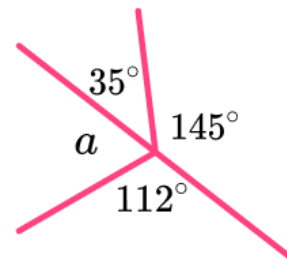
b) $18 - 2x = p$

3) **What is:**

a) 10% of 47?

b) 75% of 60?

4) **Determine the size of angle a .**

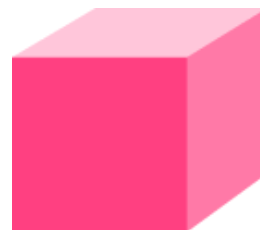


5) **A cube has:**

a) ___ vertices

b) ___ edges

c) ___ faces



Week 9: Day 2 Answers

1) Work out:

a) $\frac{1}{5}$ of 35
7

b) $\frac{2}{3}$ of 24
16

2) Make x the subject:

a) $3x + 7 = z$
 $x = \frac{z - 7}{3}$

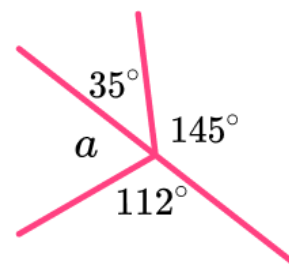
b) $18 - 2x = p$
 $x = \frac{18 - p}{2}$

3) What is:

a) 10% of 47?
4.7

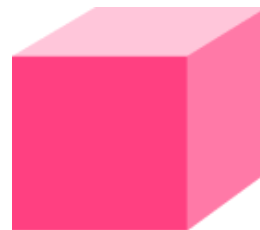
b) 75% of 60?
45

4) Determine the size of angle a .
 68°



5) A cube has:

- a) **8** vertices
- b) **12** edges
- c) **6** faces



Week 9: Day 3

1) **Work out:**

a) $\frac{3}{4}$ of 32

b) $\frac{4}{7}$ of 28

2) **Make x the subject:**

a) $\frac{x}{7} - 5 = h$

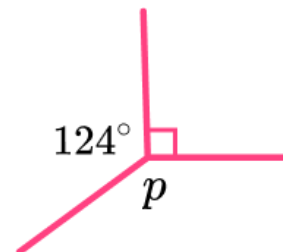
b) $\frac{2}{x} = k$

3) **What is:**

a) 5% of 80?

b) 20% of 65?

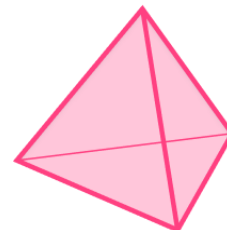
4) **Work out the size of angle p .**



5) **A tetrahedron has:**

a) ___ vertices

b) ___ faces



Week 9: Day 3 Answers

1) Work out:

a) $\frac{3}{4}$ of 32
24

b) $\frac{4}{7}$ of 28
16

2) Make x the subject:

a) $\frac{x}{7} - 5 = h$
 $x = 7(h + 5)$

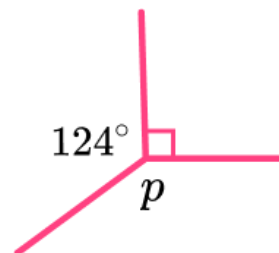
b) $\frac{2}{x} = k$
 $x = \frac{2}{k}$

3) What is:

a) 5% of 80?
4

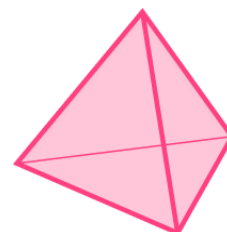
b) 20% of 65?
13

4) Work out the size of angle p .
 146°



5) A tetrahedron has:

- a) **4** vertices
b) **4** edges



Week 9: Day 4

1) **Work out:**

a) $\frac{3}{8}$ of 64

b) $\frac{1}{2}$ of 25

2) **Make x the subject:**

a) $2(2x + 3) = 5z$

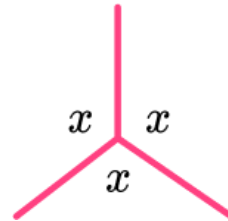
b) $11 - \frac{2}{x} = p$

3) **What is:**

a) 15% of 70?

b) 30% of 40?

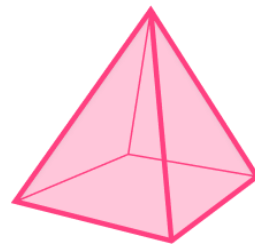
4) **What is the size of angle x ?**



5) **A square based pyramid has:**

a) ___ edges

b) ___ faces



Week 9: Day 4 Answers

1) Work out:

a) $\frac{3}{8}$ of 64
24

b) $\frac{1}{2}$ of 25
12.5

2) Make x the subject:

a) $2(2x + 3) = 5z$
 $x = \frac{5z - 6}{4}$

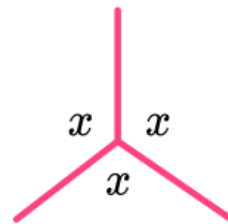
b) $11 - \frac{2}{x} = p$
 $x = \frac{2}{11 - p}$

3) What is:

a) 15% of 70?
10.5

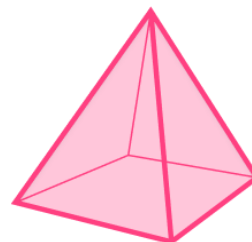
b) 30% of 40?
12

4) What is the size of angle x ?
120°



5) A square based pyramid has:

- a) **8** edges
b) **5** faces



Week 9: Day 5

1) **Work out:**

a) $\frac{3}{4}$ of 30

b) $\frac{2}{3}$ of 72

2) **Make x the subject:**

a) $\frac{3x - 2}{4} = z$

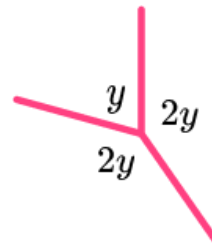
b) $18 = p - 5x$

3) **What is:**

a) 17.5% of 640?

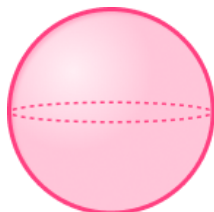
b) 85% of 210?

4) **What is the value of y ?**



5) **Give the mathematical name for:**

a)



b)



Week 9: Day 5 Answers

1) **Work out:**

a) $\frac{3}{4}$ of 30
22.5

b) $\frac{2}{3}$ of 72
48

2) **Make x the subject:**

a) $\frac{3x - 2}{4} = z$
 $x = \frac{4z + 2}{3}$

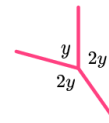
b) $18 = p - 5x$
 $x = \frac{p - 18}{5}$

3) **What is:**

a) **17.5% of 640?**
112

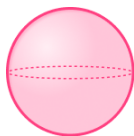
b) **85% of 210?**
178.5

4) **What is the value of y ?**
 72°



5) **Give the mathematical name for:**

a) **Sphere**



b) **Cone**



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