

Week 8

This week in a nutshell:

The topics build on the material covered last week. It is well worth doing some compare and contrast discussions (equations vs inequalities, area vs perimeter, etc).

Question 1: Fractions and mixed numbers

Question 2: Linear inequalities

Question 3: Decimals and percentages

Question 4: Angles in a quadrilateral

Question 5: Area

Students may need to be reminded about the difference between area and perimeter. You may be asked questions about links between fractions, decimals and percentages; these conversations are great for deepening your students' understanding. If needed, demonstrate how angles in a triangle can be used to derive angles in a quadrilateral.

This week's ideas for class discussion include:

Question 1: Fractions and mixed numbers

- Do you think it is easier to judge the size of a number if it given as an improper fraction or a mixed number?

Question 2: Linear inequalities

- What are the similarities/differences between equations and inequalities?

Question 3: Decimals and percentages

- Why might the relationship between decimals and percentages be useful in the “digital age”?

Question 4: Angles in quadrilateral

- How could you derive the rule for angles in a quadrilateral using triangles?

Question 5: Area

- Using only squares, how can you estimate the area of any shape?

Week 8: Day 1

1) Write as a mixed number:

a) $\frac{5}{2}$

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

2) Write down the integer solutions for:

a) $3 < x < 8$

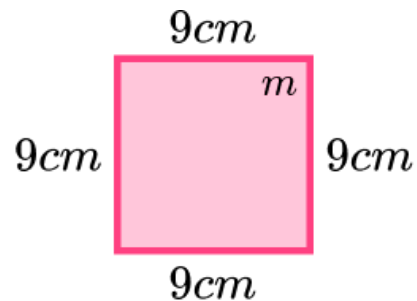
b) $-2 \leq y \leq 1$

3) Express each percentage as a decimal:

a) 50%

b) 80%

4) What is the size of the angle marked m ?



5) Calculate the area of the rectangle.



Week 8: Day 1 Answers

1) Write as a mixed number:

a) $\frac{5}{2}$ $2\frac{1}{2}$

b) $\frac{7}{4}$ $1\frac{3}{4}$

2) Write down the integer solutions for:

a) $3 < x < 8$
 $4, 5, 6, 7$

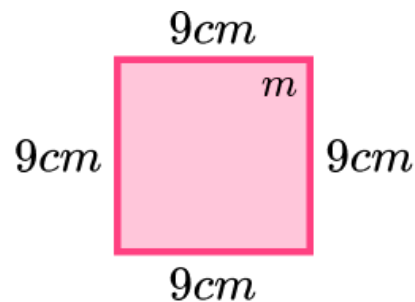
b) $-2 \leq y \leq 1$
 $-2, -1, 0, 1$

3) Express each percentage as a decimal:

a) 50%
0.5

b) 80%
0.8

4) What is the size of the angle marked m ?
 90°



5) Calculate the area of the rectangle.
 $36m^2$



Week 8: Day 2

1) Write as a mixed number:

a) $\frac{7}{3}$

b) $\frac{6}{5}$

2) Write down the integer solutions for:

a) $-1 < x \leq 3$

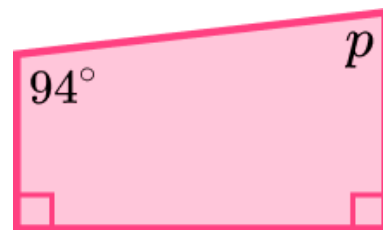
b) $-9 \leq y < -6$

3) Express each percentage as a decimal:

a) 25%

b) 8%

4) Determine the size of the angle marked p .



5) The shape below is a square.
What is its area?



Week 8: Day 2 Answers

1) Write as a mixed number:

a) $\frac{7}{3}$ $2\frac{1}{3}$

b) $\frac{6}{5}$ $1\frac{1}{5}$

2) Write down the integer solutions for:

a) $-1 < x \leq 3$
 $0, 1, 2, 3$

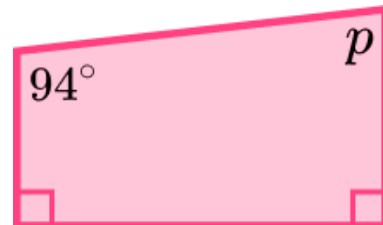
b) $-9 \leq y < -6$
 $-9, -8, -7$

3) Express each percentage as a decimal:

a) 25%
 0.25

b) 8%
 0.08

4) Determine the size of the angle marked p .
 86°



5) The shape below is a square.
What is its area?
 64cm^2



Week 8: Day 3

1) Write as an improper fraction:

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

b) $1\frac{2}{3}$

2) Indicate these inequalities on a number line:

a) $-2 < x \leq 4$

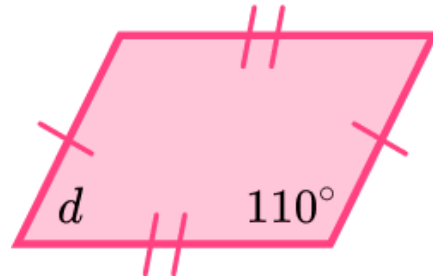
b) $1 < y$

3) Express each decimal as a percentage:

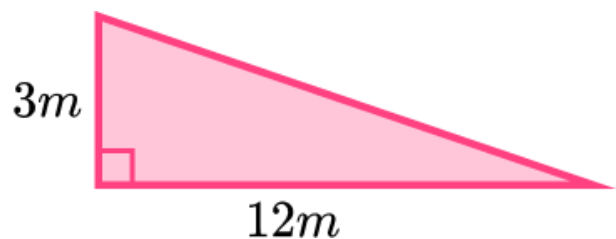
a) 0.7

b) 0.33

4) What is the size of angle d ?



5) Determine the area of this right-angled triangle.



Week 8: Day 3 Answers

1) Write as an improper fraction:

a) $1\frac{1}{2}$ $\frac{3}{2}$

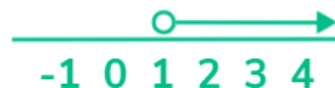
b) $1\frac{2}{3}$ $\frac{5}{3}$

2) Indicate these inequalities on a number line:

a) $-2 < x \leq 4$



b) $1 < y$

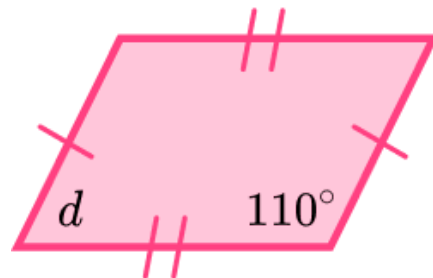


3) Express each decimal as a percentage:

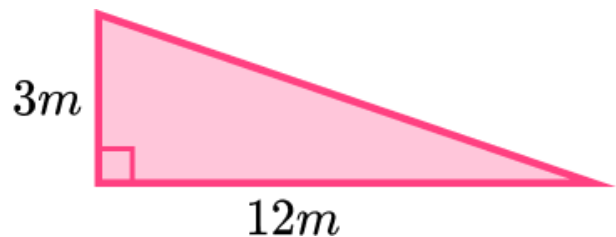
a) 0.7
70%

b) 0.33
33%

4) What is the size of angle d ?
70°



5) Determine the area of this right-angled triangle.
18m²



Week 8: Day 4

1) Write as an improper fraction:

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

b) $5\frac{3}{5}$

2) Solve the inequalities:

a) $2x - 3 \leq 8$

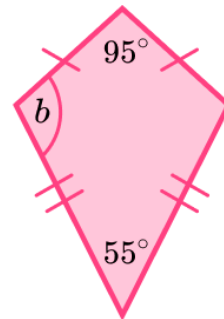
b) $14 \leq 3y + 5$

3) Express each decimal as a percentage:

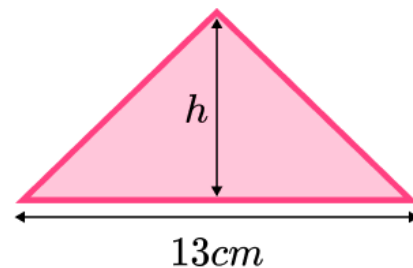
a) 0.09

b) 0.001

4) In this kite, what is the size of angle b ?



5) The area of this triangle is 39 cm^2 . What is the height, h , of the triangle?



Week 8: Day 4 Answers

1) Write as an improper fraction:

a) $3\frac{3}{4}$ $\frac{15}{4}$

b) $5\frac{3}{5}$ $\frac{28}{5}$

2) Solve the inequalities:

a) $2x - 3 \leq 8$
 $x \leq \frac{11}{2}$

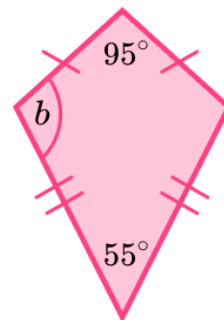
b) $14 \leq 3y + 5$
 $y \geq 3$

3) Express each decimal as a percentage:

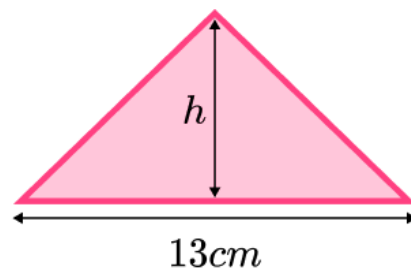
a) 0.09
9%

b) 0.001
0.1%

4) In this kite, what is the size of angle b ?
105°



5) The area of this triangle is 39 cm^2 . What is the height, h , of the triangle?
6 cm



Week 8: Day 5

1) Write as a mixed number with the fraction in its simplest form:

a) $\frac{22}{6}$

b) $\frac{30}{8}$

2) Solve the inequalities:

a) $13 \leq 5x + 3 \leq 18$

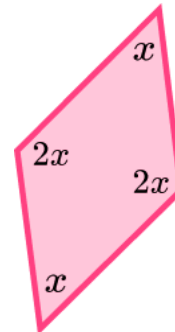
b) $11 \leq 7 - 2y$

3) Express each decimal as a percentage:

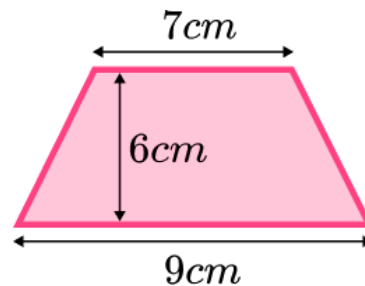
a) 1.75

b) 2.04

4) What is the size of angle x ?



5) Work out the area of this trapezium.



Week 8: Day 5 Answers

1) Write as a mixed number with the fraction in its simplest form:

a) $\frac{22}{6}$ $3\frac{2}{3}$

b) $\frac{30}{8}$ $3\frac{3}{4}$

2) Solve the inequalities:

a) $13 \leq 5x + 3 \leq 18$
 $2 \leq x \leq 3$

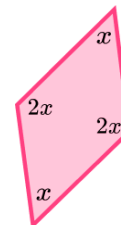
b) $11 \leq 7 - 2y$
 $y \leq -2$

3) Express each decimal as a percentage:

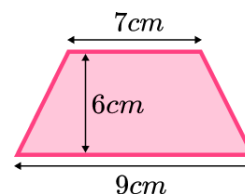
a) **1.75**
175%

b) **2.04**
204%

4) What is the size of angle x ?
 60°



5) Work out the area of this trapezium.
 48cm^2



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