Problem solving with fractions

1 Which is greater? Show your workings.

$\frac{107}{5}$ $\quad$ $20\frac{3}{4}$

2 Find the value of the star. $\frac{1}{3} = \frac{1+5}{3+\bigstar}$

3 Here are some number cards.

15	10	9	4	3

Use two of the number cards to make a number as close to 4 as possible.

$\frac{\square}{\square}$

4 There are 40 children in a playground.

$\frac{2}{5}$ of the children are boys and the rest are girls.

$\frac{1}{8}$ of the girls are playing football.

How many girls are playing football?

5 Amir is thinking of a number.

One half of my number is 14

a) What number is Amir thinking of?

b) Find $\frac{2}{7}$ of Amir's number.

6 A box contains some coloured pencils.

There are 20 more red pencils than green pencils.

$\frac{3}{10}$ of the red pencils are blunt.

$\frac{1}{4}$ of the green pencils are blunt.

There are 5 blunt green pencils.

How many blunt red pencils are there?

7 Work out the missing numbers.

a) $\frac{2}{5}$ of 60 = 3 × $\square$ $\quad$ **b)** $\frac{4}{5}$ of 40 = $\frac{1}{2}$ of $\square$

8 The symbol $\bigstar$ means triple the first number, then add the second number. For example, 7 $\bigstar$ 4 = 25

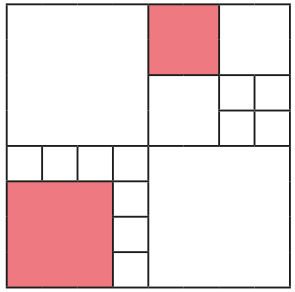
Find the missing values.

a) $\frac{1}{5} \bigstar \frac{3}{10} = \square$ $\quad$ **c)** $(\frac{1}{2} \bigstar \frac{1}{2}) \bigstar 2\frac{1}{4} = \square$

b) $3 \bigstar \square = 9\frac{5}{7}$

9 A large square is divided into small squares.

What fraction of the large square is shaded?



10 Here are three identical rectangles.

Part of each rectangle has been shaded.

What fraction of the middle rectangle is shaded?