Write each ratio in lowest terms.

1) 15 to 3 = **5 to 1**   2) 12:6 = **2:1**   3) $\dfrac{24}{14} = \dfrac{12}{7}$ 4) 36 passes to 15 fails = **12 to 5**

5) 27: 81 = **1:3**   6) 45 touchdowns to 10 interceptions = **9 to 2**   7) $\dfrac{18}{21} = \dfrac{6}{7}$ 8) 49: 539 = **1:11**

Use the table of information at the right to answer the following questions by giving a ratio in lowest terms.

9) French to Swiss?   32 to 24
        = 4:3
10) Dutch to German?   10 to 45
        = 2:9
11) English to Polish?   28 to 4
        = 7 :1
12)   Italian to German?   25 to 45
        = 5:9
13)   Swiss to Italian?   **24 to 25**

The distribution below represents people of different nationalities employed by a European business:

Dutch:	10
English:	28
French:	32
German:	45
Italian:	25
Polish:	4
Swiss:	24

In 14 - 17, use two different methods to show whether the following ratios are proportional or not.

14) $\dfrac{16}{20}$ and $\dfrac{48}{56}$ $\dfrac{16}{20}$ and $\dfrac{48}{56}$
$\dfrac{4}{5} \neq \dfrac{6}{7}$ 896 ≠ 960
        Not Proportional

15) $\dfrac{14}{8}$ and $\dfrac{84}{48}$
        Proportional

16) $\dfrac{28}{63}$ and $\dfrac{44}{99}$ $\dfrac{28}{63}$ and $\dfrac{44}{99}$
$\dfrac{4}{9} = \dfrac{4}{9}$ 2772 = 2772
        Proportional

17) $\dfrac{42}{49}$ and $\dfrac{84}{96}$
        Not Proportional

In 18 - 21, solve each proportion for the missing value.

18) $\dfrac{12}{7}$ $\times$ $\dfrac{x}{42}$

12(42) = 7x

$\boxed{x = 72}$

19) $\dfrac{6}{15}$ $\times$ $\dfrac{20}{t}$

6t = 300

$\boxed{t = 50}$

20) $\dfrac{13}{27} = \dfrac{52}{v}$

13v = 52(27)

$\boxed{v = 108}$

21) $\dfrac{8}{11} = \dfrac{x}{154}$

8(154) = 11x

$\boxed{x = 112}$

The ratio of youngsters taking tap compared to the number taking gymnastics at a local dance academy is 3 to 7.
22) If there are 49 young gymnasts enrolled, how many students are tap dancing?

$\dfrac{3}{7} = \dfrac{x}{49}$ x = 21 tap dancers

23)   What is the smallest possible number of total gymnasts and tap dancers enrolled at the school?

$\dfrac{3 \ tappers}{7 \ gymnasts}$ 3 + 7 = 10 dancers

24) Thirty tap dancers enrolled for next year. If the ratios remain the same, how many gymnasts are enrolled?

$$\frac{3}{7} = \frac{30}{x}$$ x = 70 gymnasts

A CEO allots funds to his marketing and product development departments in a ratio of 2:9, respectively.

25) If the CEO allots $20,000 to his marketing department, what does he allot to his development department?

$$\frac{2}{9} = \frac{20,000}{x}$$ x = $90,000

26) If the CEO allots $203,184 to his development department, what is the allotment for marketing?

$$\frac{2}{9} = \frac{x}{\$203,184}$$ x = $45,152

27) Given the budgets in #26, what is the total budget for both departments?

$45,152 + $203,184 = $248,336