1 The marked price of a laptop is $850. If this price is reduced by 15%, what price will be paid for the laptop?

$ [ ]

2 $\frac{3}{4}$ of all the cows in a paddock had a calf. $\frac{2}{3}$ of all the calves were male. What fraction of all the cows had male calves?

A $\frac{1}{2}$ B $\frac{8}{9}$ C $\frac{5}{12}$ D $\frac{1}{12}$

3 32% of all the people at a concert were children. If there were 96 children at the concert, how many adults were at the concert? [ ]

4 In an opening batting partnership in a cricket match one batsman scored $\frac{3}{5}$ of the runs. The other batsman scored $\frac{1}{3}$ of the runs and the remainder were extras. What fraction of the partnership runs were extras?

A $\frac{1}{15}$ B $\frac{4}{15}$ C $\frac{1}{4}$ D $\frac{1}{2}$

5 A ring was bought for $2000 and later sold for $2500. What percentage of the original price was the gain?

A 20%   B 25%   C 40%   D 80%

6 $\frac{3}{5}$ of a number is 45.

What is $\frac{2}{3}$ of the number?

A 18   B 30   C 40   D 50

7 In a netball game, Liz and Kelly played for one team and Sally and Jane played for the other.

Liz scored 13 goals from 20 attempts.

Kelly scored 7 goals from 10 attempts.

Sally scored 9 goals from 15 attempts.

Jane scored 8 goals from 12 attempts.

Who had the highest percentage success rate?

A Liz   B Kelly   C Sally   D Jane

8 What is the value of $\frac{18.75 + 12.4}{2.4 - 1.6}$ to the nearest whole number?

A 22   B 39   C 34   D 11

9 Last Friday, 16% of all students at a school were absent. If the school has 900 students, how many of these were **present** last Friday? [ ]

10 What number is exactly halfway between 0.6 and 0.04?

A 0.05   B 0.28   C 0.32   D 0.5

11 Over the last six years the value of a painting has increased by 50%. The value of the painting is now $15 000. What was the value six years ago?

A $7500   B $10000   C $5000   D $12 500

12 A number was multiplied by itself. The answer was 24 649. What was the number? [ ]

13 On Saturday, Hayden mowed 60% of the lawn. On Sunday, Hayden mowed 30% of the remaining lawn. What percentage of the whole lawn did Hayden mow on Sunday? [ ] %

14 Which does **not** have the same value as $2\frac{3}{4}$?

A 2.75   B $2\frac{6}{8}$ C $\frac{11}{4}$ D $2\frac{9}{16}$

15 A monthly ticket on a train costs $98.70 and a daily ticket costs $4.50. What is the greatest number of days that Lily can travel on the train in a month and it still be cheaper to buy daily tickets rather than a monthly ticket? [ ] days

16 Frieda needed to find the answer to a question but became confused and performed the wrong operations. She was supposed to divide by 3 and then multiply by 0.7 but instead divided by 0.7 and then multiplied by 3. Frieda's answer was 180. What should it have been? [ ]

1 Reduction = 15% of $850

$$= \frac{15}{100} \times \$850$$
$$= \$127.50$$

Price paid = $850 − $127.50
$$= \$722.50$$

2 $\frac{2}{3}$ of $\frac{3}{4}$ of all the cows had male calves.

Fraction $= \frac{2}{3} \times \frac{3}{4}$
$$= \frac{1}{2}$$

3 32% = 96

1% = 96 ÷ 32
$$= 3$$
100% = 100 × 3
$$= 300$$

So there were 300 people at the concert.
Number of adults = 300 − 96
$$= 204$$

4 Fraction of runs scored by both batsmen

combined $= \frac{3}{5} + \frac{1}{3}$
$$= \frac{14}{15}$$

Fraction that were extras $= 1 - \frac{14}{15}$
$$= \frac{1}{15}$$

5 Gain = $2500 − $2000
$$= \$500$$

Percentage gain $= \frac{\$500}{\$2000} \times 100\%$
$$= \frac{1}{4} \times 100\%$$
$$= 25\%$$

6 $\frac{3}{5}$ of a number is 45.

$\frac{1}{5}$ of the number is 45 ÷ 3 or 15.

The number is 15 × 5 or 75.

$\frac{2}{3}$ of 75 = 50

7 Liz: Success rate $= \frac{13}{20} \times 100\%$
$$= 65\%$$

Kelly: Success rate $= \frac{7}{10} \times 100\%$
$$= 70\%$$

Sally: Success rate $= \frac{9}{15} \times 100\%$
$$= 60\%$$

Jane: Success rate $= \frac{8}{12} \times 100\%$
$$= 66\frac{2}{3}\%$$

Kelly had the highest percentage success rate.

8 $\frac{18.75 + 12.4}{2.4 - 1.6} = \frac{31.15}{0.8}$
$$= 38.9375$$
$$= 39 \quad \text{(nearest whole number)}$$

9 Number absent = 16% of 900
$$= \frac{16}{100} \times 900$$
$$= 144$$

Number present = 900 − 144
$$= 756$$

10 [The number halfway between two others is the average.]

Average $= \frac{0.6 + 0.04}{2}$
$$= \frac{0.64}{2} = 0.32$$

11 The value of the painting is 50% more than it was six years ago so it is 150% of the value six years ago.

150% = $15 000
10% = $1000
100% = $10 000

The value of the painting six years ago was $10 000.

12 When the number was squared the answer was 24 649.

Number = $\sqrt{24649}$ = 157

13 Hayden had mowed 60% on Saturday so 40% remained to be mowed.

Percentage mowed on Sunday
$$= 30\% \text{ of } 40\%$$
$$= \frac{30}{100} \times 40\% = 12\%$$

14 Consider each option:

$2.75 = 2\frac{75}{100} = 2\frac{3}{4}$

$2\frac{6}{8} = 2\frac{3}{4}$ (after dividing both numerator and denominator by 2)

$\frac{11}{4} = 2\frac{3}{4}$ (4 divides into 11 twice with remainder 3)

$2\frac{9}{16}$ cannot be simplified.

The option that is not equal to $2\frac{3}{4}$ is $2\frac{9}{16}$.

15 Each day's travel costs $4.50.
Number of days = $98.70 ÷ $4.50
$$= 21.933...$$

The most number of days that Lily can travel where the daily fare is cheaper is 21.
The answer is closer to 22 than 21 but the daily fare would be dearer for 22 days.

16 After dividing by 0.7 and multiplying by 3, Frieda's answer was 180.
Before multiplying by 3 her answer would have been 60 (180 ÷ 3).
Before dividing by 0.7 her number would have been 42 (60 × 0.7).
Now Frieda should have divided by 3 first.
42 ÷ 3 = 14
She should then have multiplied by 0.7.
14 × 0.7 = 9.8
Frieda's answer should have been 9.8.