Routine Percentages etc Practice #3

1.   How many Ferrari tyres, at $450 each, can you buy for $10,000?

2.   A pound is 0.4536 kilograms. If an Ferrari Enzo weighs 3010 pounds, what is that in kg?

3.   Which is greater, winning one out of every fourteen races or a 7% win record?

4.   What is $\frac{3}{46}$ as a percentage?

5.   One horsepower is 745.7 Watts. What is the wattage of a 660 horsepower Ferrari Enzo?

6.   If you bought a Ferrari Enzo for $850,000 and sold it for $1,100,000, what is the % profit?

7.   If a Ferrari goes 250 kilometres in 90 minutes, how fast is its average speed (in kph)?

8.   How long will a Ferrari petrol tank holding 110 Litres last if uses 28 litres for each 100 km?

9.   Fernando Alonso has started 145 F1 races, and won 26 times. What is his win percentage?

10. Sebastien Vettel has won 22% of all F1 races he has entered. If he keeps this up for two more seasons (36 races) how many more wins would you expect him to have?

11. What is the ratio of squares to circles? □ □ □ □ □ □ □ □ □ ● ● ● ● ● ●
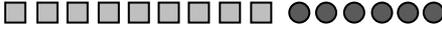
12. A car drives for half an hour at 80 kph and one hour at 95 kph. What is its average speed?

13. In 2004 Ferrari drivers won five-sixths of the F1 races. If drivers from other teams won three races, how many races were there that year in the championship?

14. If a car's value falls by 18%, down to $15,600, what did it cost before the fall?

15. A car company offers a money back guarantee return within 30 days on new cars. They find only 300 people return their cars, out of 4,200 sold. What is that as a fraction?

16. If a car yard drops all its prices by 5%, what price will a car that was $22,000 become?

17. If the ratio of new cars sold to second hand is 1:3, how many new cars would you expect to sell for sales of 144 second hand cars?

18. In 2009 Ferrari won the F1 championship. Their drivers won half of all the races. McLaren drivers won two-thirds of the remaining races. What fraction were won by other teams?

19. How much GST is there on a $1,200,000 Enzo? (GST is 15% on the original value.)

20. A racing team splits a $50,000 prize in the ratio 5:3 (winner:second), what does the winner get?

Answers: Routine Percentages etc Practice #3

There are usually many ways of answering these questions (but only one correct answer).

1. $10000 \div 450 = 22.22.$ need to round down   **22 tyres**

2.   1 kg = 2.205 pounds $3010 \div 2.205 =$ **1,365 kg**
       ⤸ ÷ 0.2.205

3. $1 \div 14 = 0.0714 = 7.14\%$ which is larger than 7%   **1 in 14 is larger**

4. $3 \div 46 = 0.0652 =$ **6.52%**
       ⤷ × 745.7

5.   1 horse = 745.7 Watts $660 \times 745.7 =$ **492 MW** (or 492,162 Watts)

6.   The rise is 250000 (1,100,000 − 850,000). 250000 change on the original 850000
     $= {}^{250}/_{850} = 0.2941$ $0.2941 \times 100 =$ **29.4% profit**

7.   250 kilometres in 1½ hours $250 \div 1.5 =$ **167 kph**

8. $110L \div 28$ L/100 km = 3.928 lots of 100 km =   **393 kilometres**

9.   26 out of 145 = ${}^{26}/_{145} = 0.1793$ $0.1793 \times 100 =$ **17.9%**

10. 22% of 36 = ${}^{22}/_{100} \times 36 = 7.92$ need to round =   **8 races**

11. 9 : 6 =   **3 : 2**

12. It goes 40 + 95 = 135 km in 1.5 hours $135 \div 1.5 =$ **90 kph**

13. Ferrari won $\frac{5}{6}$, so other teams won $\frac{1}{6}$, if $\frac{1}{6} \times$ number = 3, number =   **18 races**

14. 18% decrease = 100 − 18 = 82% of value left.
     So 0.82 × start = $15600. Rearranging: Start = $15600 ÷ 0.82 =   **$19,024**

15. 300 out of 4200 = ${}^{300}/_{4200} = {}^{1 \times 300}/_{14 \times 300} =$ $\frac{1}{14}$

16. 5% of $22000 = ${}^{5}/_{100} \times 220000 = 1100.$ Take this from 22000 =   **$20,900**

17. 1 : 3 = 48 : 144   (× 48 on both sides)   **48 new cars**

18. $\frac{1}{2}$ were won by Ferrari. $\frac{2}{3}$ of $\frac{1}{2} = \frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$ were won by McLaren.
     So $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$ were won by either Ferrari or McLaren. Leaving = $\frac{1}{6}$

19. GST is 15% on the 115%, so is $\frac{15}{115}$ of the cost. $\frac{15}{115} \times 1200000 =$ **$156,521.74**

20. 5 : 3 so 5 + 3 = 8 shares. $50000 ÷ 8 = $6250 share   **$31,250**   2013

     (Questions 12, 14 and 19 are Merit)