Rates problems

1 Lisa types 396 words in 6 minutes. What is her typing speed?

2 Who earns the most per hour?
Baker: $127.42 for 8 hours
Hairdresser: $92.14 for 6 hours
Painter: $178.58 for 10 hours
Plumber: $247.37 for 12 hours
Roof tiler: $198.11 for 11 hours

3 Petrol costs 96 cents/litre.
How much does 35 litres cost?

4 A tap drips 28 L of water each day.
a How many litres are wasted after 5 days?

b How many weeks will it take to waste 1176 L?

5 A tree grew 31.2 cm in a quarter of a year. What is its growth rate in cm/week?

6 If Vicky's heart beats 72 times per minute, how long will it take to beat 1836 times?

7 A tank of capacity 78 L takes 15 minutes to fill. What rate is this in L/min?

8 Convert $10.80/h to cents/min.

9 Australia's population is 20 834 000 and its area is 7 682 300 km^2. What is the population density in persons/km^2, to two decimal places?

10 A car travels 340 km on 30.94 litres of petrol. Calculate its fuel consumption rate in L per 100 km.

11 Melissa earned $817.60 for working from 9:00am to 5:00pm Monday to Friday. What is her hourly rate of pay?

12 If a house painter paints at a rate of 25 m^2/hour, how long will it take to paint 187.5 cm^2?

13 If 32 litres of petrol cost $31.36, what is this rate in cents/litre?

14 Meat costs $3.38 for 520 g. Calculate the:
a cost as a rate in $/kg
b cost for 880 g of meat

15 Electricity costs 10.25 cents/kWh. Robyn received an electricity bill of $172.20 for 92 days.
a How many kWh of electricity did she use?
b What was her daily kWh usage (to one decimal place)?

16 A 7-minute mobile phone call costs $2.38. Find the rate in cents/min.

17 Convert 1750 mL/second to L/min.

18 If four people can unload a truck in 28 minutes, how long would it take seven people?

19 Nails cost $4.60/kg. How much would one 8 g nail cost?

20 A 3.2 kg parcel costs $5.12 to post. What is the postage rate in $/kg?

21 Australia's birth rate is 12 per 1000 and its death rate is 6.5 per 1000. If the population at the start of 2007 was 20 834 000, then how many:
a babies were born in 2007?
b people died in 2007?

22 A petrol tanker discharges 680 L of fuel per minute. How long will it take to empty its tank of 8500 L?

23 A cricket team needs to score 45 runs in 12 overs. What is the required run rate in runs per over?

24 If a 1900 phone call costs 22 cents per 25 seconds, how much is a 5-minute call?

25 The cost of water is 91 cents/kL.
A household uses an average of 850 litres per day. Calculate:
a water usage in 91 days
b the cost of water for 91 days

26 Convert 72 km/h to m/s.

27 A car uses petrol at the rate of 7.9 L per 100 km. How far will it travel on 37.92 litres?

ANSWERS — YR 10 — Rates :- WORKSHEET 1-09

1. 66 words/min.
2. Plumber $20.61/hr.
3. $33.60
4. a) 140 Litres
   b) 42 days
5. 2.4 cm/wk
6. 25.5 minutes
7. 5.2 L/min.
8. 18 cents/min
9. 2.71 people/km²
10. 9.1 L/100km.
11. $20.44/hr.
12. 2.7 seconds
13. 98 cents/L
14. a) $6.50/kg
    b) $5.72.

15. a) 1680 kwhrs
    b) 18.3 kw/day
16. 34 cents/min.
17. 105 L/min.
18. 16 minutes
19. 3.68 cents (~ 4¢)
20. $1.6/kg.
21. a) 250,008 born in 2007
    b) 135,421 died in 2007
22. 12.5 mins.
23. 3.75
24. $2.64
25. a) 77.35 kL
    b) $70.39
26. 20 m/s
27. 480 km.