1) Express 64 as a product of prime factors And hence show that it is both a square and cube number
2) Find the $50^{\text {th }}$ term of the sequence $1,8,15,22, \ldots$
3) Work out $10 \times\left(3+4^{2}\right)$
4) Work out $41.54 \div 3.1$
5) Work out $0.26 \times 0.71$

HA1. 4

1) Work out $3 \frac{1}{4} \div 1 \frac{2}{3}$
2) Decrease $£ 560$ by $20 \%$
3) Expand and simplify $2(4 x+5)-2(3-2 x)$
4) Solve $6 x+3=7-4 x$
5) Work out the value of $3 c^{2}$ when $c=2$
6) Expand and simplify $(4 x+5)(3 x-7)$
7) Factorise fully $8 x^{3}+12 x^{2}$
8) Factorise $x^{2}-9 x+20$
9) Work out $64 \div 0.5$
10) Work out $1 \frac{1}{3} \div 2 \frac{1}{6}$
11) Make $x$ the subject of $y=\sqrt{a x-4}$
12) Divide 450 kg in the ratio $2: 7$
13) Work out the value of $2 x^{2}-y$ when $x=3$ and $y=-2$
14) The median of $7,25, x, 7,8$ and 28 is 10 . Find $x$
15) Solve $\frac{3 x+7}{2}=2 x+14$
16) Solve the inequality $3 x-5>5 x+7$

17) Expand and simplify 5(a-2b) - 3(b+2a)
18) Work out $2 \frac{2}{3} \div 1 \frac{3}{5}$
19) Work out $0.28 \times 3.9$
20) Work out $47.67 \div 0.7$
21) Simplify $2 \sqrt{75}+\sqrt{8}+\sqrt{27}-3 \sqrt{12}$

22) Simplify $a^{4} \times a^{2} \times b^{3} \div a$
23) Complete $65 \mathrm{~cm}^{2}=$ $\qquad$ . $\mathrm{m}^{2}$
24) Make $x$ the subject of $9+a x=3 x-b$
25) Calculate the area of a semi-circle with diameter 5 cm . Leave your answer in terms of $\pi$
26) Factorise and solve $x^{2}-9 x+20=0$
27) Express in completed square form $x^{2}+14 x+100$
28) Simplify $\frac{5}{2 x}-\frac{8}{3 x}$
29) Expand and simplify $2 \sqrt{3}(3+5 \sqrt{3})$
30) Find the gradient of the line $4-2 y=3 x$
31) Simplify $\frac{\left(2 x^{3} y\right)^{3}}{x}$
32) Express 216 as a product of primes and hence find its cube root
33) A price is reduced from $£ 400$ to $£ 344$. Calculate the percentage change
34) Estimate $\frac{8.107 \times 4.83}{0.002138}$
35) Express 430812.03 in standard form to 3 significant figures
36) Solve, by completing the square

$$
x^{2}+10 x+24=0
$$


2) Simplify $\frac{x^{2}-16}{x+4}$
3) Work out $6 \frac{1}{3}-3 \frac{3}{7}$
4) Solve $-13<4 x-5 \leq-1$ and display the solution on a number line
5) Expand and simplify $(6 x-5)(3 x+2)$

1) Work out $74.1 \div 0.03$
2) Find the gradient of the line joining $(11,4)$ and $(2,5)$
3) Make $x$ the subject of $a x+b=9-3 x$
4) Evaluate $16^{-\frac{1}{2}}$
5) Solve simultaneously $3 x+4 y=14$ and $4 x-y=25$
6) Solve using the quadratic formula (and a calculator) $4 x^{2}+5 x-3=0$
7) Work out $1.3 \times 10^{3} \times 1.3 \times 10^{2}$
8) Find the equation of the line perpendicular to $y=-\frac{1}{2} x+7$ passing through the point $(5,2)$
9) Expand and simplify $(3 x-5)^{2}$
10) Find the lowest common multiple of 60 and 84
11) Solve simultaneously:

$$
2 x-y=10 \text { and } 5 x+3 y=3
$$

2) Simplify $\sqrt{5} \times \sqrt{60}$
3) $? \mathrm{~m}^{2}=500 \mathrm{~cm}^{2}$
4) Work out the value of $2 x^{3}+3 x$ when $x=-2$
5) Solve by factorising $6 x^{2}+17 x+5=0$
