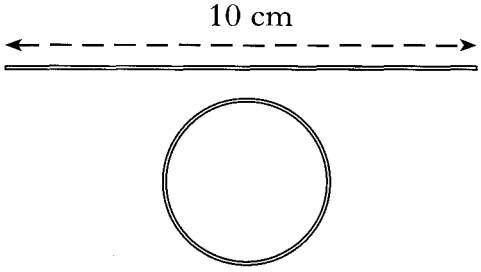
1.	Express as a single fraction in its simplest form $\frac{1}{p}+\frac{2}{(p+5)}$.	2
2.	(*a*) Factorise $4x^2-y^2$. (*b*) Hence simplify $\frac{4x^2-y^2}{6x+3y}$.	1 2
3.	Solve the equation $\frac{2}{x}+1=6$.	3
4.	Simplify $\frac{3}{m}+\frac{4}{(m+1)}$	3
5.	A piece of gold wire 10 centimetres long is made into a circle.  The circumference of the circle is equal to the length of the wire. Show that the area of the circle is **exactly** $\frac{25}{\pi}$ square centimetres.	4

6.	(*a*) A driver travels from A to B, a distance of x kilometres, at a constant speed of 75 kilometres per hour. Find the time taken for this journey in terms of x. (*b*) The time for the journey from B to A is $\frac{x}{50}$ hours. Hence calculate the driver's average speed for the whole journey.	1 4	
7.	(*a*) Factorise $p^2 - 4q^2$. (*b*) Hence simplify $\frac{p^2 - 4q^2}{3p + 6q}$.	1 2	
8.	A is the point (a^2, a). T is the point (t^2, t), $a \neq t$ Find the gradient of the line AT. Give your answer in its simplest form.	3	
9.	(*a*) Factorise $x^2 - 16$. (*b*) Express $\frac{5(2x-3)}{4x^2-9}$ in its simplest form.	1 2	

Solutions:

1.	$\frac{3p+5}{p(p+5)}$
2.	*(a)* $(2x - y)(2x + y)$ *(b)* $\frac{2x-y}{3}$
3.	$\frac{2}{5}$
4.	$\frac{7m+3}{m(m+1)}$
5.	Proof.
6.	*(a)* $\frac{x}{75}$ hours *(b)* 60 km/h
7.	*(a)* $(p-2q)(p+2q)$ *(b)* $\frac{(p-2q)(p+2q)}{3(p+2q)} = \frac{p-2q}{3}$
8.	$\frac{1}{t+a}$
9.	*(a)* $(x-4)(x+4)$ *(b)* $\frac{5(2x-3)}{(2x-3)(2x+3)} = \frac{5}{2x+3}$