Subjecting Formula Past Paper Answers Edexcel Maths IGCSE Higher-Calculator

1.

	$3y + 6x - 3 = x + 5y$ $5x - 3 = 2y$ oe	$(5x - 3)/2$	3	M1 Multiplying out brackets. M1 dep Correctly collecting like terms, (3 terms needed here). A1 oe
				Total 3 marks

2.

	$\frac{A}{2\pi r} = r + h$ or $A = 2\pi r^2 + 2\pi rh$	$\frac{A}{2\pi r} - r = h$ oe	2	M1 Correct first step A1 e.g. $\frac{A-2\pi r^2}{2\pi r}$ Give full credit to equivalent correct expressions
				Total 2 marks

3.

Question	Working	Answer	Mark	Notes
	$A = (4 - \pi)r^2$ **or** $\frac{A}{r^2} = 4 - \pi$		3	M1
	$r^2 = \frac{A}{4 - \pi}$			M1 for isolating r^2
		$\sqrt{\frac{A}{4 - \pi}}$		A1 Also accept $\pm\sqrt{\frac{A}{4 - \pi}}$
				Total 3 marks

4.

Question	Working	Answer	Mark	Notes
	$y^2 = ay^2 + n$		5	M1
	$y^2 - ay^2 = n$ **or** $1 = a + \frac{n}{y^2}$ **or** $1 - a = \frac{n}{y^2}$			M1 isolate terms in y^2 **or** divide through by y^2
	$y^2(1 - a) = n$			M1 take out y^2 as a common factor
	$y^2 = \frac{n}{1 - a}$			M1 y^2 as subject
		$\sqrt{\frac{n}{1 - a}}$		A1 accept $\sqrt{\frac{-n}{a - 1}}$
				Total 5 marks

5.

$5t - 5g = 2t + 7$			M1 for expanding bracket within the equation **or** division of all terms by 5
$5t - 2t = 7 + 5g$			M1 (ft a 4 term equation) to isolate terms in t
	$t = \frac{5g + 7}{3}$	3	A1 oe
			Total 3 marks

6.

$t(3p + 1) = 7 - 2p$		4	M1	multiplies by $3p + 1$ must have brackets
$3pt + 2p = 7 - t$			M1	isolates terms in p
$p(3t + 2) = 7 - t$			M1	takes p out as a common factor
	$p = \frac{7-t}{3t+2}$		A1	or $p = \frac{t-7}{-3t-2}$ oe with p as the subject
				Total 7 marks

7.

$k^2 = \frac{5m+2e}{3e}$ **or** $k\sqrt{3e} = \sqrt{5m+2e}$		4	M1	Squaring both sides **or** clearing fraction
$3ek^2 = 5m + 2e$			M1	Clearing fraction **and** squaring both sides
$3ek^2 - 2e = 5m$ or $-5m = 2e - 3ek^2$ $e(3k^2 - 2) = 5m$ or $-5m = e(2 - 3k^2)$			M1	Isolating terms in e in a correct equation
	$e = \frac{5m}{3k^2-2}$		A1	for $e = \frac{5m}{3k^2-2}$ **or** $e = \frac{-5m}{2-3k^2}$ oe
				Total 4 marks

8.

$x^2 = \frac{2b-a}{7-am}$		4	M1	for squaring both sides
$x^2(7 - am) = 2b - a$			M1	for multiplying by $7 - am$ in a correct equation allow $x^2 \times 7 - am = 2b - a$ $7 - am \times x^2 = 2b - a$
$7x^2 - 2b = amx^2 - a$ **or** $a - amx^2 = 2b - 7x^2$			M1	for isolating terms in a in a correct equation
	$a = \frac{7x^2-2b}{mx^2-1}$ oe		A1	or for $a = \frac{2b-7x^2}{1-mx^2}$ oe with a as the subject