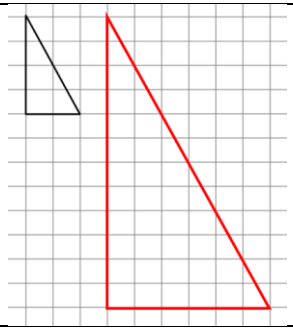
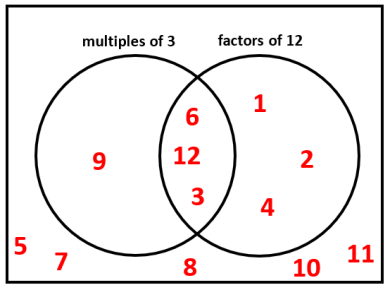
Year 8 Summer Assessment CALCULATOR Mark Scheme

Question	Answer	Mark	Notes
1 (a)	27 and 31	1	cao
1 (b)	12	1	cao
2 (a)	0.053, 0.503, 0.53, 5.03, 5.3	B2	cao
		B1	For 4 of 5 terms in the correct order
3 (a)	5	1	cao
3 (b)	6	M1	For a correct first step e.g. $4x = 19 + 5$ or $4x = 24$
		A1	6
4	48	1	cao
	Co-interior angles add to 180 (can also refer to as allied angles)	1	Alternative justifications allowed e.g. Angles on a straight line equal 180 and alternate angles are equal.
5 (a)	7	1	cao
5 (b)	10	1	cao
6 (a)	$6x + 45$	1	cao
6 (b)	$x^3 + 7x$	1	cao
7	10.2308(0826…)	M1	For numerator or denominator correctly calculated 31.699 or 3.098…
		A1	10.2308(0826…)

8	$8(x - 3)$	B2 B1	cao For identification of 8 as HCF or partial factorisation e.g. $2(4x - 12)$ or $4(2x - 6)$
9	a) $75\% = \frac{3}{4}$ True ✓ False b) $\frac{8}{10} = 8\%$ True False ✓ c) $250\% = \frac{5}{2}$ True ✓ False d) $0.03 = 3\%$ True ✓ False	B2 B1	All four correct statements For two or three statements correct
10	12 : 15 : 35	B2 B1	oe For identification of any common multiple of 3 and 5 (may be seen as part of a ratio or listing multiples with multiple identified)
11	25%	M1 A1	0.25 seen or 70 – 56 (= 14) cao
12	No, with valid reason	M1 A1	4n + 2 (= 208) seen Valid reasons n = 51.5, or n = 206/4 (oe), or 4n = 206 so n would not be a whole number
13	300	M1 A1	For multiplier 0.7 seen, or intention to find the value of 10%, $\frac{210}{7} (= 30)$ or 1% $\frac{210}{70} (= 3)$ or 210 = 70% cao

14		B2 B1	cao, in any position or orientation For dimensions 6 and 12 written or one dimension drawn correctly
15	25.46	M1 M1 A1	For $\pi \times d = 160$ seen (oe), or intention to divide by pi, $\frac{160}{\pi} (= 50.929..)$ or intention to divide by 2, $\frac{160}{2} (= 80)$ For a complete method i.e. '50.929…' ÷ 2 (= 25.464…), or '80' ÷ π (= 25.464…), cao
16	$8x - 4$	M1 A1	For attempt to find perimeter of the square e.g. $4(6x - 3)$ or $6x - 3 + 6x - 3 + 6x - 3 + 6x - 3$ or $24x - 12$ cao
17	B or $y = 3x + 6$	1	cao
18	30.9	M1 M1 A1	For $\pi \times 6^2$ (= 113.097…) or 12×12 (dep on M1) For a complete method e.g. '144' – '113.097' Answers in the range 30.9 to 31.0
19	117.8	M1 A1	For $\pi \times 15^2$ (= 706.858…) or $\frac{60}{360}$ oe seen Answers in the range 117.7 to 117.8

20	$y = 3x + 2$	B2 B1	cao For an answer in the form $y = 3x + c$ where c ≠ 2 or $y = mx + 2$ where m ≠ 3 or states the gradient is 3
21 (a)		1 1 1	For 9 in left section only and 1, 2, 4 in right section only For 3, 6, 12 in middle section only For 5, 7, 8, 10, 11 in the outside section only
21 (b)	$\frac{3}{12}$	B2ft B1	oe FT their diagram for $\frac{a}{12}$ where a <12 or $\frac{3}{b}$ where b > 3
22	8cm	M1 M1 A1	6 × 10 × 12 (= 720) or 6 × 15 (= 90) ‘720’ ÷ ‘90’ cao

Extension Questions

1	58	B1 M1 A1	For working out any angle correctly i.e. BAE = 70 or BDE = 128 or BDC = 52 or CBD = 70 Fully correct method to find BCD e.g. BAE = 180 – 110 (= 70) and BCD = 180 – (“70” + 52) Cao Do not award 3 marks if the diagram includes any wrong values.

<table>
<tr>
<td>2</td>
<td>New York with correct values for all three cities.</td>
<td>M2

(M1)

A1</td>
<td>For a fully correct method to convert all costs to the same currency e.g.
45 × 1.2 or 54 and 50 ÷ 0.95 or 52.6(3)

For a correct method to convert one cost to another currency e.g.
45 × 1.2 or 54

New York with correct values for all three cities.

<table>
<tr><th>City</th><th>£</th><th>$</th><th>Euros</th></tr>
<tr><td>London</td><td>45</td><td>54</td><td>51.3(0)</td></tr>
<tr><td>New York</td><td>43.(33)</td><td>52</td><td>49.4(0)</td></tr>
<tr><td>Berlin</td><td>43.8(..)</td><td>52.6(3)</td><td>50</td></tr>
</table>
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<tr>
<td>3</td>
<td>1696 or 540π</td>
<td>M1

M1

M1

A1</td>
<td>For finding the volume of the prism e.g.
$\pi \times 5^2 \times 24$ or 600π or 1884.(…)
Accept π to be 3.

(indep) for correct substitution into the formula for density e.g.
$0.9 = \frac{Mass}{[600\pi]}$

(indep) for correct rearrangement of formula e.g.
0.9 × [600π]
(implies 2nd M)

Note: 0.9 × 600π scores 3 marks.

Accept an answer in the range 1620 to 1697</td>
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