Subject/Topic: Date:

12(i) Vert. shift from Q to P $= \frac{1}{5} \times 15$
$= 3$ units (since PQ:QR = 1:4)

Q = (0, 12)

Horizontal shift from P to Q = −2 units
Horizontal shift from P to R = 10 units
Horizontal shift from P to S = 20 units

(since modulus graphs ~~are~~ technically have a line of symmetry)

x-coordinate of S = −2 + 20
= 18

(ii) x-coordinate of R = −2 + 10
= 8

R (8, 0)

Gradient ~~Equation~~ of RS $= \frac{15-0}{18-8}$
$= \frac{3}{2}$

$y = \frac{3}{2}x + c$
$0 = \frac{3}{2}(8) + c$
$c = -12$
$y = \frac{3}{2}x - 12$

Therefore, $y = \left|\frac{3}{2}x - 12\right|$ is the curve with $a = \frac{3}{2}$ and $b = 12$