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Test: Functions

09-10.24

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Start time: 4:11pm

End time: 4:33pm

2.

1.

a) transformation of  $y = -0.7a_6$   $\rightarrow$  ~~ac right~~ M1  
A1

b) Horizontal stretch by  $\frac{1}{2}$  M1

$\frac{-1.7a_6}{2} = -0.8a_6$  M1A1

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2.  $f(x) - fg(x) = 0$

$$\frac{x+4}{x+1} \cdot \frac{x-2}{x-4} > 0 \quad M1$$

$$\frac{(x+4)(x-4)}{(x+1)(x-4)} = 0$$

$$\frac{x^2-16}{(x+1)(x-4)} = 0$$

$$x^2 - 16 = x^2 + x + 2 \quad \cancel{(x+1)(x-4)}$$

$$\frac{x-14}{(x+1)(x-4)} = 0 \quad A1$$

$x < -1 \quad \text{or} \quad 4 < x \leq 14 \quad A1A1$

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3. N/A

4.  $f(2) = f(-1)$

$$f(2) = 8 + 12 + 2a + b \quad M1$$

$$= 2a + b + 20 \quad A1$$

$$f(-1) = -1 + 3 - a + b \quad M1$$

$$= -a + b + 2 \quad A1$$

$$2a + b + 20 = -a + b + 2 \quad A1$$

~~$\begin{matrix} 2a \\ 3a \end{matrix}$~~   $3a = b + 2 - 20$

$$3a = -18 \quad A1$$

$$a = -6 \quad A1$$

6. N/A

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