A1.2.1:

(a) $f(x) + 3$

(b) $f(x) - 3$

(c) $f(x - 3)$

(d) $f(x + 3)$

(e) $-f(x)$

(f) $f(-x)$

(g) $3f(x)$

(h) $f(x)/3$

A1.2.2:

(a) Vertical stretch by a factor of 5

(b) Shift right by 5

(c) Flip along x axis

(d) Flip along x axis and stretch by a factor of 5

(e) Horizontal shrink by a factor of 5

(f) Vertical stretch by a factor of 5 then shift down 3

A1.2.3:

(a) 3

(b) 1

(c) 4

(d) 5

(e) 2

A1.2.4: Skip

A1.2.5: Skip

A1.2.6: $y = 2\sqrt{3(x-2) - (x-2)^2}$

A1.2.7: $y = -\sqrt{3(-x-1) - (-x-1)^2} - 1$

A1.2.8:

(a) Vertical stretch by factor of two

(b) Shift up by one

A1.2.9: Skip

A1.2.10: Skip

A1.2.11: Skip

A1.2.12: Skip

A1.2.13: Skip

A1.2.14: Skip

A1.2.15: Skip

A1.2.16: Skip

A1.2.17: Skip

A1.2.18: Skip

A1.2.19: Skip

A1.2.20: Skip

A1.2.21: Skip

A1.2.22: Skip

A1.2.23: Skip

A1.2.24: Skip

A1.2.25: Skip

A1.2.26: Skip

A1.2.27:

(a) The graph of $f\big(|x|\big)$ takes the part of f's graph on the positive half of the plane and mirrors it onto the negative half of the plane.

(b)

(c)

A1.2.28: Skip

A1.2.29: Skip

A1.2.30: Skip

A1.2.31: Domain of $f+g$: $\mathbb{R}$

$$f+g = x^3+2x^2+3x^2-1 = x^3+5x^2-1$$

Domain of $f-g$: $\mathbb{R}$

$$f-g = x^3-x^2+1$$

Domain of fg: $\mathbb{R}$

$$fg = 3x^5+6x^4-x^3-2x^2$$

Domain of f/g: $\mathbb{R}-\{+\sqrt{1/3},-\sqrt{1/3}\}$

$$f/g = \frac{x^3-2x^2}{3x^2-1}$$

A1.2.32: Domain of $f+g$: $[-1,1]$

$$f+g=\sqrt{1+x}+\sqrt{1-x}$$

Domain of $f-g$: $[-1,1]$

$$f-g=\sqrt{1+x}-\sqrt{1-x}$$

Domain of fg: $[-1,1]$

$$fg=\sqrt{1-x^2}$$

Domain of f/g: $[-1,1)$

$$f/g=\frac{\sqrt{1+x}}{\sqrt{1-x}}$$

A1.2.33: Skip

A1.2.34: Skip