

Precalculus - Unit 1 - 1.1-1.3 Power Point Review Answers

Slide 2: Yes, passes the vertical line test

Slide 3: $(-2, 5)$ & $(3, 2)$ $y = mx + b$
 $m = \frac{5-2}{-2-3} = \frac{3}{-5}$ $2 = \frac{-3}{5}(3) + b$
 $2 = \frac{-9}{5} + b$
 $\frac{19}{5} = b$

$y = \frac{-3}{5}x + \frac{19}{5}$

Slide 4: $X = -5$

Slide 5: $3x - 6y = 5$ $(2, -8)$
 $-6y = -3x + 5$ $y = mx + b$
 $y = \frac{1}{2}x - \frac{5}{6}$ $-8 = (-2)(2) + b$
 $m = \frac{1}{2} \perp m = -2$ $-8 = -4 + b$
 $-4 = b$

$y = -2x - 4$

Slide 6: temperature in terms of chirps
 $(n, t) \rightarrow (120 \text{ chirps}, 70^\circ) (168 \text{ chirps}, 80^\circ F)$
 $m = \frac{80-70}{168-120} = \frac{10}{48} = \frac{5}{24}$ $y = mx + b$
 $70 = (\frac{5}{24})(120) + b$
 $70 = 25 + b$
 $45 = b$

$t = \frac{5}{24}n + 45$

Slide 7: $f(x) = 6x^2 + 3x - 5$
 $f(-2) = 6(-2)^2 + 3(-2) - 5$
 $f(-2) = 13$

Slide 8: Domain: \mathbb{R}

Slide 9: Domain: $\mathbb{R}, x \neq \frac{8}{3}$
 $3x - 8 = 0$ \uparrow avoids \div by 0
 $3x = 8$
 $x = \frac{8}{3}$

Slide 10: Domain: $x \geq \frac{1}{2}$
 $2x - 1 \geq 0$ \uparrow avoids negatives under $\sqrt{\quad}$
 $2x \geq 1$
 $x \geq \frac{1}{2}$

Slide 11: $f(x) = 5x^2 - 4x + 1$
 $f(x+h) = 5(x+h)^2 - 4(x+h) + 1$
 $= 5(x^2 + 2xh + h^2) - 4x - 4h + 1$
 $= 5x^2 + 10xh + 5h^2 - 4x - 4h + 1$

$$\frac{f(x+h) - f(x)}{h} =$$

$$\frac{(5x^2 + 10xh + 5h^2 - 4x - 4h + 1) - (5x^2 - 4x + 1)}{h}$$

$$= \frac{10xh + 5h^2 - 4h}{h} = \boxed{10x + 5h - 4}$$

Slide 12: Approximates from graph

Max: $(-1.8, 10.3)$

Min: $(1.8, -10.3)$

Slide 13: Remember to use x's

Increase: $(-\infty, -1.8) \cup (1.8, \infty)$

Decrease: $(-1.8, 1.8)$

Slide 14: Domain: $-3 < x \leq 1$

$(-3, 1]$

Range: $-4 \leq y \leq 0$

$[-4, 0]$

Slide 15: Domain: \mathbb{R}

Range: $y \geq -3$ -or- $[-3, \infty)$

Slide 16: Graph on calculator

Min: $(-0.8, -5.2)$