

Trig / Pre-Calculus Study Guide answers

CH2

- 1) $f(x) = -x + 5$
- 2) $P(x) = -2(x+1)^2 - 2$
- 3) 4.5 in.
- 4) $h = \frac{k}{r^2}$
- 5) Neither
- 6) Even
- 7) 192 g
- 8) $-\infty, \infty$ } $\leftarrow$ not good
- 9) ∞, ∞ }
- 10) $f(x) = x^3 - 4x^2 - 2x + 8$
- 11) 2551.29
- 12) Yes
- 13) No
- 14) $\pm 1, \pm 1/2, \pm 7, \pm 7/2, \pm 1/7, \pm 1/14$
- 15) Yes
- 16) No
- 17) $f(x) = x^3 - x^2 + 7x - 7$; zeros $1, \pm \sqrt{7}i$
- 18) ~~4 complex zeros~~; 2 real (hits x-axis twice). Of the 2 real sol'ns only one is rational $x=1$
- 19) $f(x) = (x+3)(x+5)(x+2i)(x-2i)$

$$8. \lim_{x \rightarrow \infty} f(x) = -\infty ; \lim_{x \rightarrow -\infty} f(x) = \infty$$

$$9. \lim_{x \rightarrow \infty} f(x) = \infty ; \lim_{x \rightarrow -\infty} f(x) = \infty$$

1. You're just finding the eqn of a line thru 2 points.
Find slope 1st, b 2nd. Plug into $y = mx + b$

2. Solve for a in $y = a(x-h)^2 + k$ by plugging in x, y, h, k given

3. To maximize or minimize a quadratic $\Rightarrow$ FIND THE VERTEX!

5+6) Odd Fns: $f(-x) = -f(x)$ even fns $f(-x) = f(x)$

7. 1. Define variables

2. Write eqn w/ k

3. Plug in values to solve for k

4. Rewrite eqn w/ k plugged in

5. Answer question by solving from given info

$$8, 9. \in \mathbb{B} \quad f(x) = a x^n$$

	+	-
n odd	$\begin{pmatrix} \uparrow & \downarrow \end{pmatrix}$	$\begin{pmatrix} \downarrow & \uparrow \end{pmatrix}$
n even	$\begin{pmatrix} \uparrow & \uparrow \end{pmatrix}$	$\begin{pmatrix} \downarrow & \downarrow \end{pmatrix}$

10. FOIL, then multiply in the last one

11. Graphing calc. Recall Volume = l.w.h.

12} find $f(k)$ if you get
13} zero, it's a factor

14. $\frac{\pm \text{factors of back \#}}{\pm \text{factors of lead coefficient}}$

Synthetic $\div$
15+16 if all +, upper
mix, lower

17. FOIL

18} Get list of
19} potential zeros. Test
thru Synthetic.
Then Factor