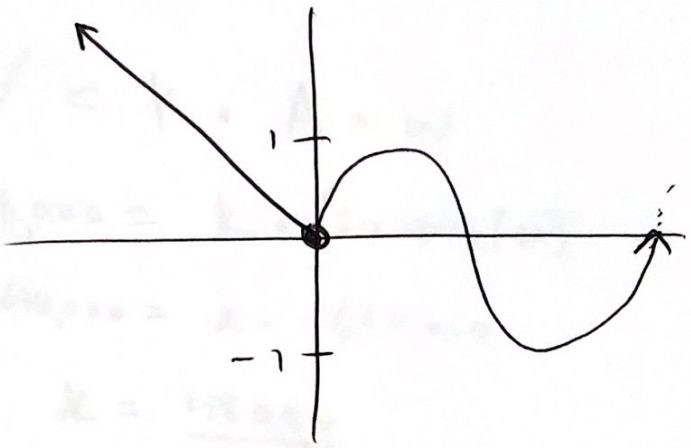
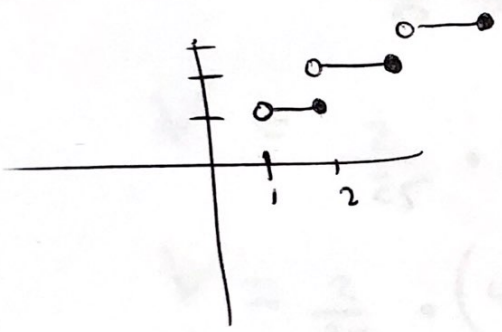
7a



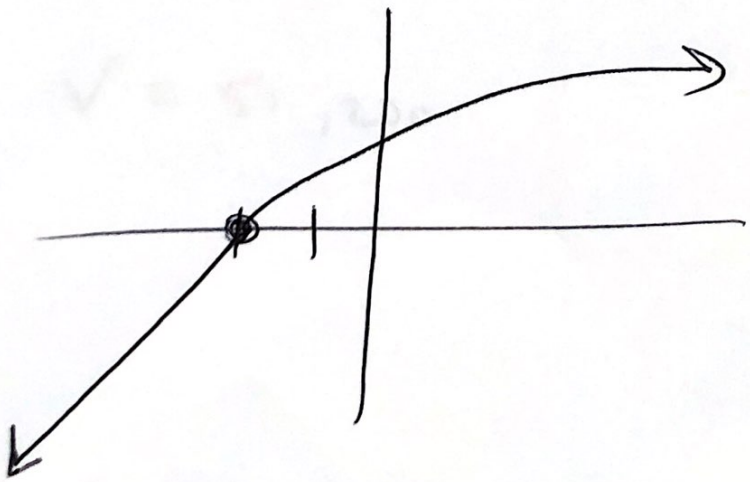
7b Ceiling



7d

$y = .5\lceil x-6 \rceil + 3$

7c



(8)

$$V = k \cdot A \cdot w$$

$$48{,}000 = k \cdot (200 \times 300)(10)$$

$$48{,}000 = k \cdot 600{,}000$$

$$k = \frac{48{,}000}{600{,}000}$$

$$k = \frac{48}{600} \rightarrow$$ 125

$$k = \frac{4}{50} \rightarrow \frac{2}{25}$$

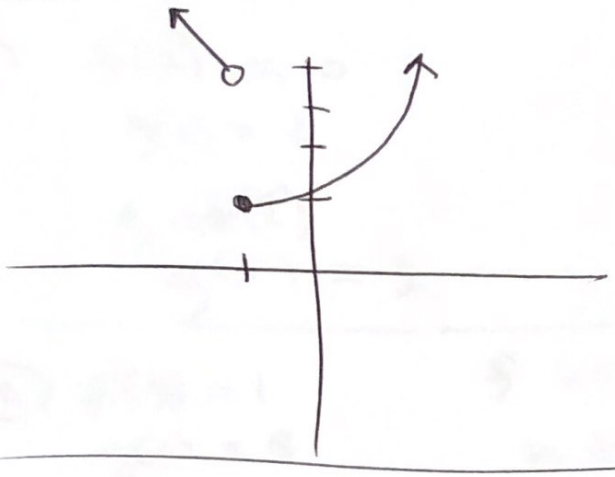
$$V = \frac{2}{25} \cdot A \cdot w$$

$$V = \frac{2}{25} \cdot (400 \times 400) \cdot 4$$

$$V = \frac{2}{25} \cdot 640{,}000$$

$$V = 51{,}200$$

Prop 4



$f(3) = 11$

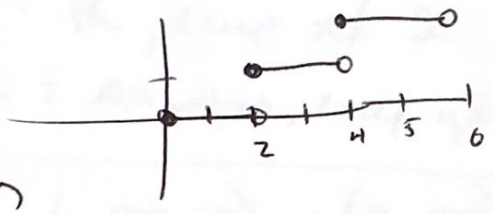
$f(-2) = 5$

$f(1) = 3$

$f(-5) = 8$

$f(x) = \lceil x \rceil - 2$

$f(x) = [\frac{1}{2}x]$



Can't remember if packet said floor or ceiling

Variations

① $A = \frac{kB}{C}$

$6 = \frac{k \cdot 2}{1}$

$k = 3$

$A = \frac{3B}{C}$

$A = \frac{3 \cdot 3}{2} = \frac{9}{2}$ or 4.5

② $m = \frac{k \cdot p}{q^2}$

$10 = \frac{k \cdot 2}{1}$

$k = 5$

$m = \frac{5p}{q^2}$

$m = \frac{5 \cdot 4}{4^2} \rightarrow \frac{20}{16}$

$m = 5/4$

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① $f(2) = 0$

$g(0) = 2$

$g \circ f(2)$

$g(0) = 2$

---

② $f(3) = 1$

$g(6) = 18$

$h(-5) = -2$

$f \circ g(2) = 0$

$h \circ f(11) = 6$

$g \circ h(-1) = 2$

---

③ $f(x) = \frac{5}{x-2}$

D: $\mathbb{R}$, except $x \neq 2$

R: All values, except $y \neq 0$

$g(x) = \frac{3}{\sqrt{x^2-4}}$

D: $(-\infty; 2) \cup (2, \infty)$

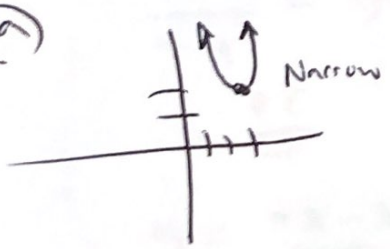
↖ Anything from $-2 < x < 2$ makes this imaginary

Also 2, -2 make it undefined

---

④

(a)

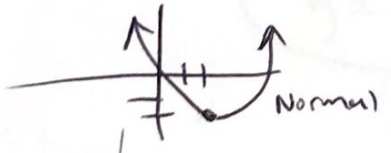


(b) $y = x^2 - 4x + 2$

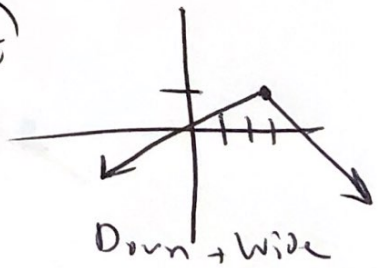
$y - 2 + \_ = x^2 - 4x + \_$

$y - 2 + 4 = (x-2)^2$

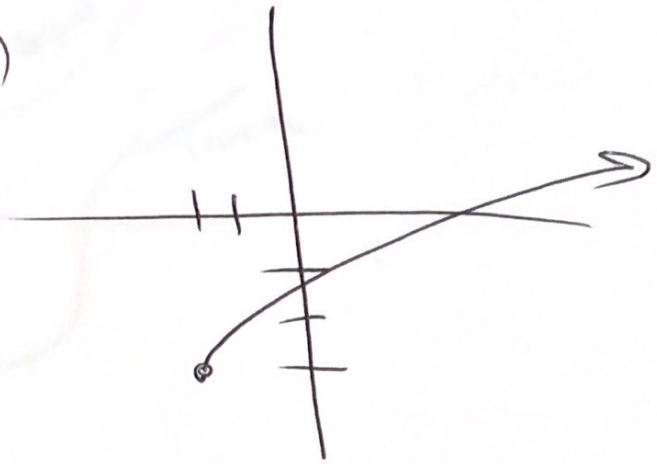
$y + 2 = (x-2)^2$



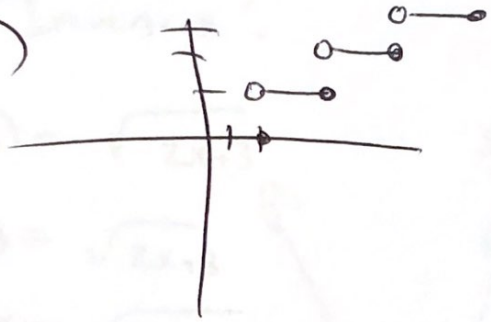
(c)



(4) (d)



(e)



Can't remember is paper says floor or ceiling

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(5) Inverse

$y = 3 - 4x$

$x = 3 - 4y$

$\frac{x+3}{-4} = y$

or

$y = \frac{-x-3}{4}$

$y = e^x$

$x = e^y$

Use ln

$\ln x = y \ln e$

$y = \ln x$

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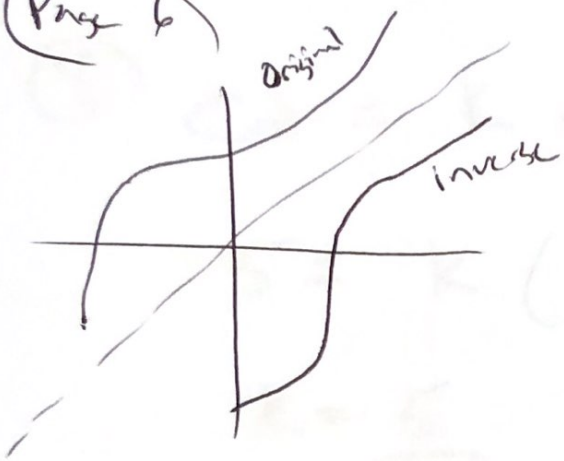

(7) Inverses?

$g(x) = \sqrt{2x+3}$

$y = \sqrt{2x+3}$

$x = \sqrt{2y+3}$

$x^2 = 2y+3$

$\frac{x^2-3}{2}$ yes!

$f(x) = \frac{x^2-3}{2}$

$x = \frac{y^2-3}{2}$

$2x = y^2-3$

$2x+3 = y^2$

$y = \pm\sqrt{2x+3}$

(8) $\text{Cost} = K \cdot (\text{diameter})^2$

$5 = k(12)^2$

$K = \frac{5}{144}$

$\text{Cost} = \frac{5}{144}(15)^2$

$\text{Cost} = \frac{1125}{144}$

or

$\$7.82$

12
225
× 5
1125

---

(9) $\text{Grade} = K \cdot \frac{\text{minutes of studying}}{\text{sleep}}$

$G = \frac{K \cdot m}{s}$

$95 = \frac{K \cdot 60}{8}$

$K = 12\frac{2}{3}$ or $\frac{38}{3}$

$G = \frac{38 \cdot m}{3s} \rightarrow G = \frac{38 \cdot 30}{60}$

Use Hours!

(9) $\text{Grade} = \frac{K \cdot \text{study}}{\text{sleep}}$

$95 = \frac{K \cdot 1}{8}$

$K = 760$

$\text{Grade} = \frac{760 \cdot \text{study}}{\text{sleep}}$

$\text{Grade} = \frac{760 \cdot \frac{1}{2}}{6}$

$\text{Grade} = 63$