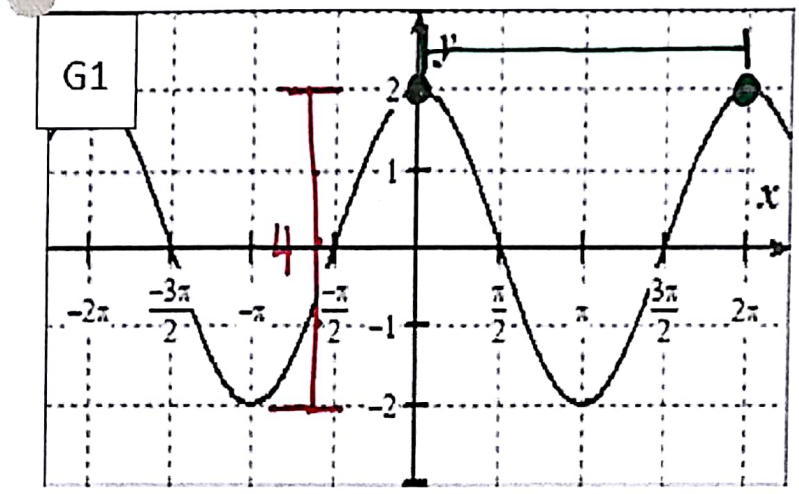
November 30

GUIDED NOTES: Graphs of Sine and Cosine

amplitude – height from the middle of the wave

period – how long the graph takes until it repeats

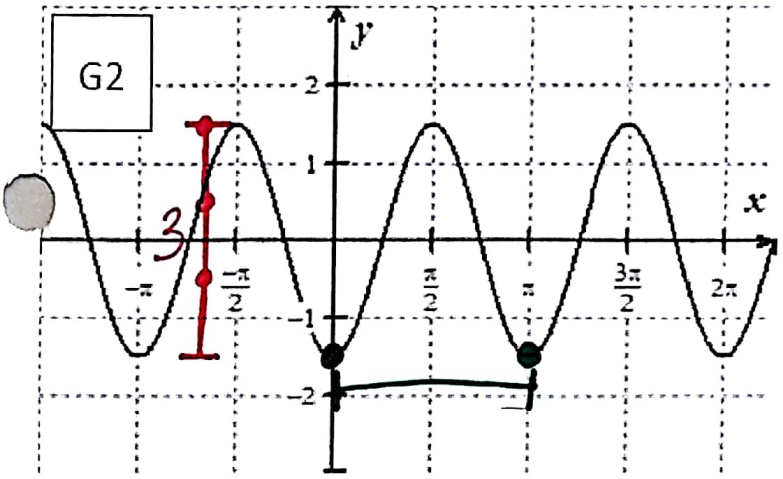
EX1.



$amp = \frac{4}{2} = \boxed{2}$

$period = 2\pi - 0 = \boxed{2\pi}$

EX2.

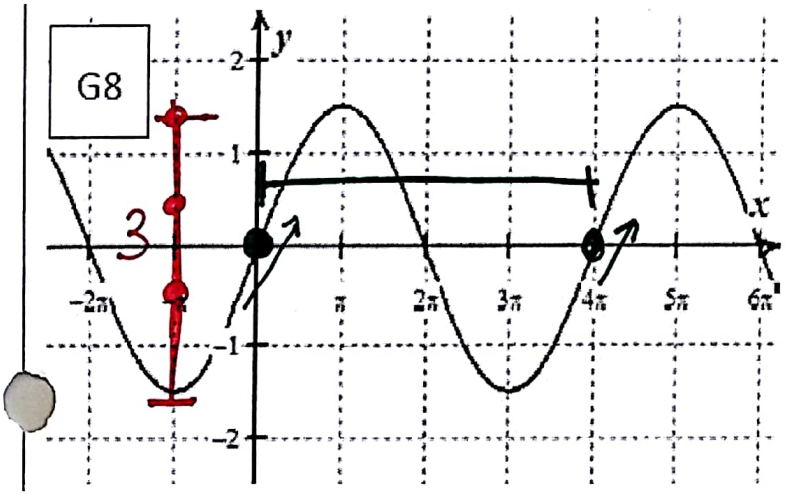


height

$amp = \frac{3}{2} = \boxed{1.5}$

$period = \pi - 0 = \boxed{\pi}$

EX3.



$amp = \frac{3}{2} = \boxed{1.5}$

$period = 4\pi - 0 = \boxed{4\pi}$

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Solve Rational Equations

Ex1 Solve: $\frac{(x-8)}{(x-3)} = \frac{(x+5)}{(x+3)}$ restrictions: $x \neq \pm 3$

$$(x-8)(x+3) = (x-3)(x+5)$$
$$x^2 - 5x - 24 = x^2 + 2x - 15$$
$$-5x - 24 = 2x - 15$$
$$-7x = 9$$
$$\boxed{x = -\frac{9}{7}}$$

Ex2 Solve: $\frac{x^2}{x-9} = \frac{81}{x-9}$ restrictions: $x \neq 9$

$$x^2 = 81$$
$$x = \pm 9$$
$$\boxed{x = -9}$$

Ex3 Solve: $\frac{5k}{(k+2)} + \frac{2}{k} = 5$ restrictions: $k \neq -2, 0$

LCD: $k(k+2)$

$$\frac{5k \cdot k(k+2)}{(k+2)} + \frac{2 \cdot k(k+2)}{k} = 5k(k+2)$$

$$5k \cdot k + 2(k+2) = 5k(k+2)$$

$$5k^2 + 2k + 4 = 5k^2 + 10k$$

$$2k + 4 = 10k$$

$$4 = 8k$$

$$\boxed{\frac{1}{2} = k}$$