HW Review

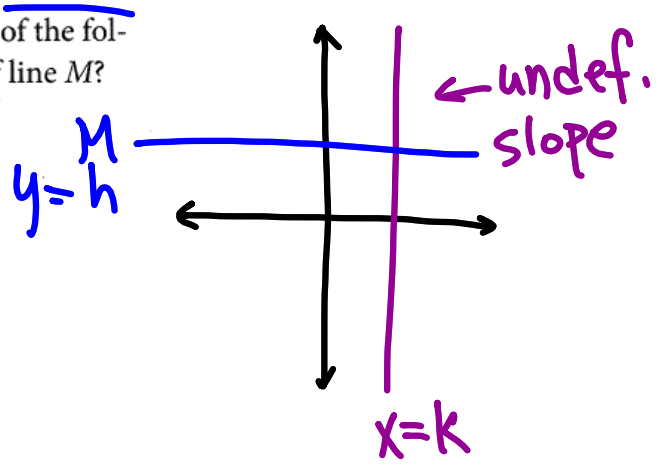
7. Line L has an undefined slope. Line M is perpendicular to line L. Which of the following could be the equation of line M?

A) $x = y$

B) $y = 7$

C) $x = -3$

D) $xy = 4$



8. A line in the xy-plane that passes through the coordinate points $(3, -6)$ and $(-7, -4)$ will never intersect a line that is represented by which of the following equations?

A) $x + 5y = 6$

B) $x + \frac{y}{2} = 7$

C) $y - 2x = -9$

D) $2y - x = -8$

→ parallel. → same slope

$m = \frac{-4-(-6)}{-7-3} = \frac{2}{-10} = -\frac{1}{5}$

$5y = -x + 6$

$y = -\frac{1x}{5} + 6$

$\rightarrow m = -\frac{1}{5}$ ✓

9. A car rental agency charges a per day rental fee which includes a daily mileage allowance plus a certain amount per mile driven over the allowance. The graph above compares the miles driven over the allowance and the total cost for a 3-day rental. What does the C-intercept most likely represent in this scenario?

A) The per day rental fee for renting the car

B) The number of miles a renter may drive the car per day

C) The penalty a renter must pay if the daily mileage allowance is exceeded

D) The total cost of a 3-day rental assuming the car is not driven over the allowance

When $m=0$
↳ miles over allowance

$$\frac{2}{3}x + cy = 2$$

10. If the slope of the equation shown above is 6, what is the value of c?

A) -4

B) $-\frac{1}{9}$

C) $\frac{1}{3}$

D) 4

$cy = -\frac{2}{3}x + \frac{2}{c}$

$\text{slope} = -\frac{\frac{2}{3}}{c} = \frac{6}{1}$

$\frac{-1}{9} = \frac{18c}{18} = \frac{-2}{18}$

11. Anneke is competing in a 500-meter freestyle swim event, which consists of swimming the length of a pool 20 times. If Anneke averages 26.4 seconds per length of the pool, which of the following equations could be used to determine the number of meters (m) Anneke has left in the event after swimming for s seconds?

A) $m = 500 - \frac{25s}{26.4}$

B) $m = 500 - 25s$

C) $m = \frac{25s}{26.4}$

D) $m = 500 - 20s$

1 Lap $= \frac{500}{20}$
$= 25$ m

26.4 sec → 1 lap

52.8 sec → 2 laps

79.2 sec → 3 laps

100 sec → $\frac{100}{26.4}$ laps

dist: $25\left(\frac{s}{26.4}\right)$ ← 5 sec → $\frac{s}{26.4}$

Dist $= 25\left(\frac{s}{26.4}\right)$

12. If the graph of the equation $y = 5x + 3$ is shifted down 4 units, what is the x-intercept of the new line?

A) -1

B) $\frac{1}{5}$

C) 1

D) $\frac{5}{4}$

$y = 5x + 3 - 4$

(when $y = 0$) → $y = 5x - 1$

$0 = 5x - 1$

$1 = 5x \rightarrow x = \frac{1}{5}$

13. A new color copier purchased for $8,500 is expected to depreciate (lose value) according to the equation $y = -1,250x + 8,500$, where y is the value of the copier x years after it was purchased. The company that bought the copier plans to sell it when the value is $1,000 and upgrade to a new one. How many years after the copier is purchased will the company sell it?

$1000 = -1250x + 8500$

$-7500 = -1250x$

$6 = x$

6

$$\frac{3(h+2)-4}{6} = \frac{h(7\times 2-5)}{2}$$

14. In the equation above, what is the value of h?

$14 = 5$

$6(h+2)-8 = 6h(7\times 2-5)$

$6h+12-8 = 5h$

$-6h \quad -6h$

$h = -8$

$+8 \quad +8$

$h = 0$