BE-PRECALC TUESDAY 9-1-09

FROM MEMORY: ① FORMULA FOR: Ⓐ Area of Circle
Ⓑ Circumference of Circle

MENTAL MATH: ② Ⓐ $\frac{3}{5} + 4$ Ⓑ $\frac{3}{5}\left(\frac{8}{3}\right)$

③ FIND THE EQL ⊥ to $y = -\frac{1}{2}x + 3$ through $(4, -5)$

ACT KMI JUNE 09

④ THE COORDINATES of the ENDPOINTS of $\overline{CD}$, IN the STANDARD (x, y) COORDINATE PLANE, ARE $(-4, -2)$ AND $(14, 2)$. WHAT is the X-coordinate of the midpoint of $\overline{CD}$?

⑤ IN $\triangle ABC$ the SUM of the MEASURES of $\angle A$ AND $\angle B$ is 47°. What is the measure of $\angle C$?

ANSWERS TO ACT

④ MIDPOINT $= \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

$\frac{-4+14}{2}$

$= 5$

⑤ $\angle A + \angle B + \angle C = 180°$

$47°$ $\quad -47$

$\therefore \angle C = 133°$

Homework Review ⇒ Pg 36 #22, 23, 25, 26, 28, 30

Answers:

(22) $\boxed{2x - y - 8 = 0}$ or $\boxed{2x - y = 8}$

$Ax + By + C = 0$ $\quad$ $Ax + By = C$

(23) $\boxed{4x - 9y = 183}$

(25) $\boxed{x + 5y = -15}$

(26) $\boxed{x + 6y = -5}$

(28) (A) $\boxed{4x - 5y = -100}$

(B) $\boxed{5x + 4y = -43}$

(30) (A) ⊥ plus one vertical ⇒ $\boxed{\begin{array}{l} x = 3 \\ y = 2 \end{array}}$ (vertical) (horizontal)

(B) //, no y intercept ⇒ Both Vertical

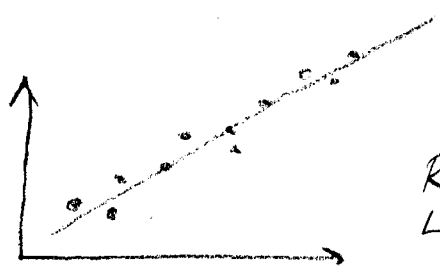
$\boxed{\begin{array}{l} x = 5 \\ x = 6 \end{array}}$

Ch. 1-6 Modeling Real-World Data With Linear Functions

↕ Number facts

Scatter plot ⇒

NO PATTERN
or
NO CORRELATION



LINEAR RELATIONSHIP
⇒ POSITIVE RELATIONSHIP
OR
POSITIVE CORRELATION

LINEAR RELATIONSHIP
⇒ NEGATIVE RELATIONSHIP
OR
NEGATIVE CORRELATION

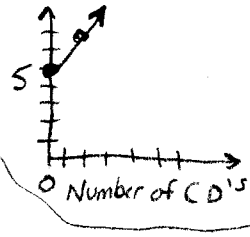
Real World Problems

Note:

SLOPE = RATE

b = "STARTING VALUE"

Ex) pay $5 to join club
AND ½ per CD to rent
↑
m

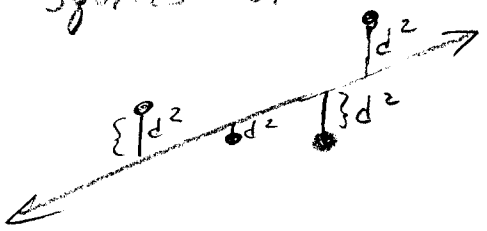


CAN ESTIMATE THE BEST FIT LINE BY USING A "Reasonable" pair of points ⇒ "PREDICTION" LINE or EQUATION

{Ref. Ex 1 – Pg 39}

r ⇒ measure of how good the calculated "best fit" or Regression line fits the data. The closer to +1 for positive correlations and -1 for negative correlations, the better the fit.

Method ⇒ • "Least Squares" Best Fit
- Discovered by Gauss
- Minimize the total sum of the squares of the "errors"



Ex 2 Pg 40 ⇒ Excel Demo

NOTE: Google Docs works too, but NOT as well.

- Homework ⇒ Pg. 44 # 15 to 19.