Key

Geometry Chapter 1 Pre-Test

Find a pattern for the following sequences.

1.) 6, 10, 14, 18, 22...

+4 +4 +4 +4

+4

2.) 5, 8, 12, 17, 23...

3 4 5 6

Each increment increases by 1

3.) 60, 40, 30, 25, 22.5...

20 10 5 2.5

Each increment is halved

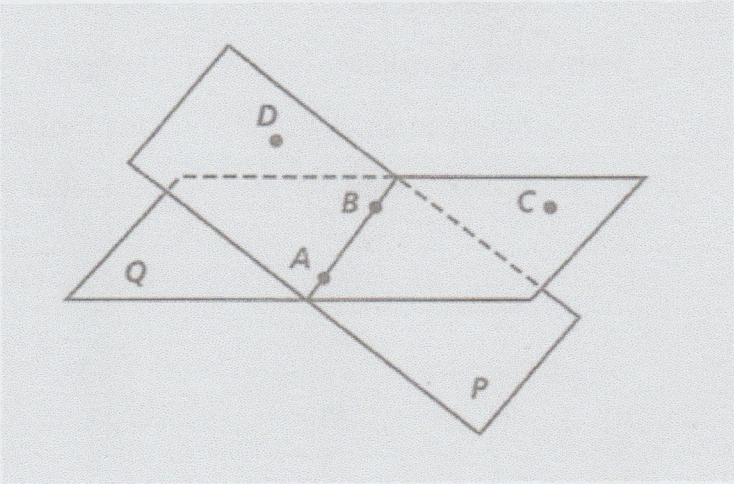
20, 20÷2 = 10, 10÷2 = 5, 5÷2 = 2.5

4.) -2, 6, -18, 54, -162...

×-3 ×-3 ×-3 ×-3

* -3

Use the illustration to answer the following.



1.) What is the intersection of planes P and Q?

intersection of 2 planes is a line. Here it is $\overleftrightarrow{PQ}$

2.) List two pairs of collinear points.

AB, AC, BC

DB, DA

3.) What is the minimum requirement for a plane? Include one from the illustration.

3 noncollinear points

or

1 noncollinear point and a line

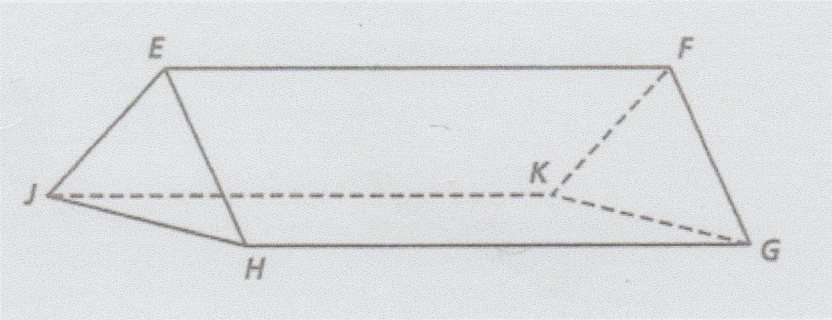
Use the illustration to answer the following.

1.) Name all of the segments parallel to EH.

$\overline{FG}$

2.) Name all segments skew to HG.

$\overline{JE}$ $\overline{KF}$



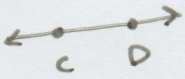
skew lines not on same plane, will never touch

Include proper arrow format for each of the following.

1.) Draw a line segment featuring points A and B.

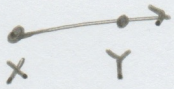
(no arrows)

2.) Draw line CD.



(arrows on both ends)

3.) Draw the ray XY.

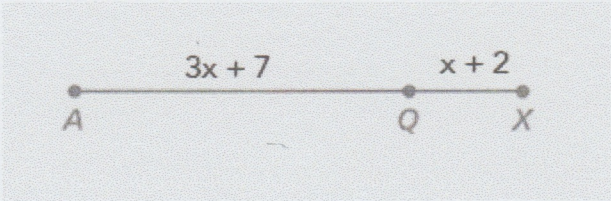


(one arrow, one terminal end)

If AX = 57, find the value of each of the following.

1.) AQ

$\overline{AQ} = 3x+7$



2.) x

$\boxed{12}$

$3x+7+x+2=57$

$4x+9=57$

$-9 \quad -9$

$\frac{4x}{4}=\frac{48}{4}$

$x=12$

Find the measure of each of the following angles.

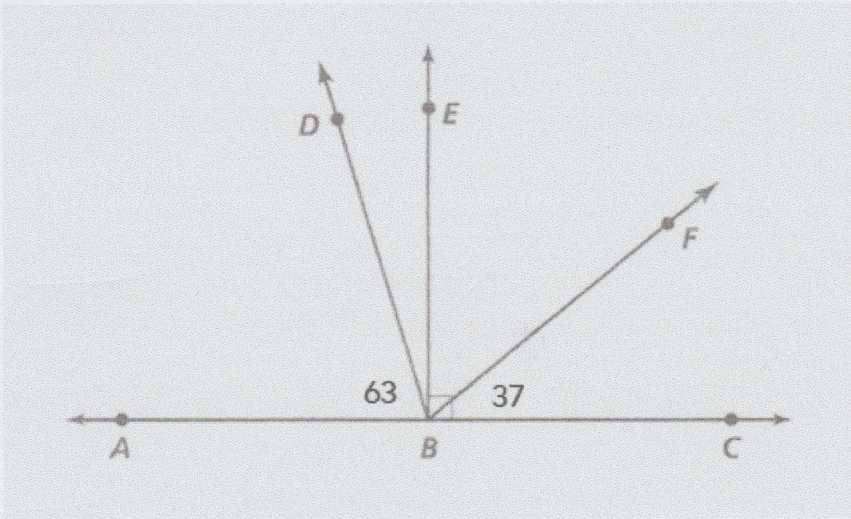
1.) ∠DBE

$\boxed{27°}$

2.) ∠DBF

$\boxed{53°}$

3.) ∠DBC



$\measuredangle DBC = \measuredangle DBE + 90°$

$27° + 90°$

$\boxed{=117°}$

$\measuredangle ABE = 90°$

$\measuredangle CBE = 90°$

$\measuredangle ADB + \measuredangle DBE = 90°$

$63° + \measuredangle DBE = 90°$

$-63 \qquad -63°$

$\measuredangle DBE = 27°$

$\measuredangle EBF + \measuredangle FBC = 90°$

$\measuredangle EBF + 37° = 90°$

$-37° \quad -37°$

$\measuredangle EBF = 53°$

FInd the distance between the points.

1.) $\overset{x_2\ y_2}{(2, 4)}$ and $\overset{x_1\ y_1}{(-6, 7)}$

$\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$\sqrt{(2-(-6))^2+(4-7)^2}$

$\sqrt{(2++6)^2+(-3)^2}$

$\sqrt{(8)^2+(-3)^2}$

$\sqrt{64+9} = \boxed{\sqrt{73}}$

2.) $\overset{x_1\ y_1}{(-1, -5)}$ and $\overset{x_2\ y_2}{(4, 7)}$

$\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

$\sqrt{(4-(-1))^2+(7-(-5))^2}$

$\sqrt{(4++1)^2+(7++5)^2}$

$\sqrt{(5)^2+(12)^2}$

$\sqrt{25+144}$

$\sqrt{169} = \boxed{13}$

3.) $\overset{x_1\ y_1}{(-7, 0)}$ and $\overset{x_2\ y_2}{(-3, 2)}$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(-3-(-7))^2 + (2-0)^2}$$

$$\sqrt{(-3+7)^2 + (2)^2}$$

$$\sqrt{(4)^2 + (2)^2}$$

$$\sqrt{16+4}$$

$$= \boxed{\sqrt{20} = 2\sqrt{5}}$$

Find the midpoint of each segment.

1.) A $\overset{x_2\ y_2}{(6, 7)}$, B $\overset{x_1\ y_1}{(-4, 1)}$

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

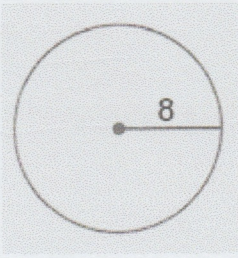
$$\left(\frac{6+(-4)}{2}, \frac{7+1}{2}\right) = \left(\frac{2}{2}, \frac{8}{2}\right) = \boxed{(1, 4)}$$

2.) C $\overset{x_2\ y_2}{(5, -3)}$, D $\overset{x_1\ y_1}{(-9, 2)}$

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

$$\left(\frac{5+(-9)}{2}, \frac{-3+2}{2}\right) = \left(\frac{-4}{2}, \frac{-1}{2}\right) = \boxed{\left(-2, -\frac{1}{2}\right)}$$

Find the circumference of the circle in terms of π.



$$C = 2\pi r$$

$$= 2\pi(8)$$

$$\boxed{= 16\pi \text{ units}}$$

Find the perimeter and area of a rectangle when:

b = 8 cm, h = 6 cm

area = base * height

$(8\text{ cm})(6\text{ cm})$

$\boxed{48\text{ cm}^2}$

perimeter = $2b + 2h$

$2(8\text{ cm}) + 2(6\text{ cm})$

$16\text{cm} + 12\text{cm}$

$\boxed{28\text{cm}}$

FInd the perimeter and area for the following figure.

Perimeter: $4+4+3+4+7+8$

$8+3+4+7+8$

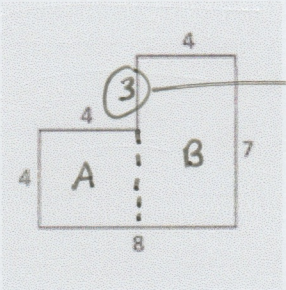
$11+4+7+8$

$15+7+8$

$22+8$

30

$\boxed{30 \text{ units}}$



$7-4$

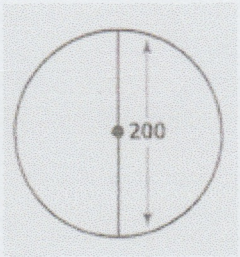
Area = Area A + Area B

$(4)(4) + (7)(4)$

$16 + 28$

$\boxed{44 \text{ units}^2}$

FInd the area of the circle in terms of π.



$D = 200$

$R = \frac{D}{2}$

$R = \frac{200}{2} = 100$

Area $= \pi r^2$

$\pi(100)^2$

$\pi(100)(100)$

$\boxed{10000\pi \text{ units}^2}$