

Don't forget to SIMPLIFY! ☺

GT Geometry - K. Bernhard

Unit 1 Practice

USE PENCIL!!

SHOW ALL WORK FOR CREDIT!!

Name _____

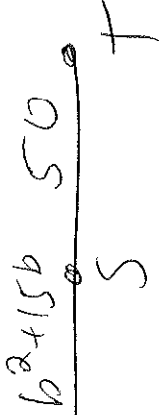
Date _____

No decimals or mixed numbers please ☺

1. Find the value of each variable if S is between R and T.

a) $RS = b^2 + 15b$, $ST = 50$, $RT = 150$
 $400 = 300$

$b = -20$
 $b = 5$



b) $RS \cong b^2 + 15b$ and $ST = 50$ and S is the midpoint of \overline{RT}

$R \cdot b^2 + 15b = 50$
 $ST = 50$

c) $RS = 2x^2$, $ST = 19$, $RT = 109$

2. Find the value of each variable.

a) $CD = 3x + 2$, $BC = 2x$, $AE = 84$

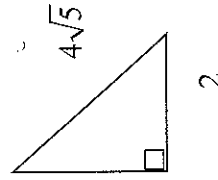
$2(3x+2) + 2(2x) = 84$
 $6x + 4 + 4x = 84$
 $(5x+4) \cdot 10x = 80$
 $x = 8$

b)

$124^\circ \leftarrow \left(\frac{1}{x}\right)^\circ$

3. Find the value of x for each.

a)



$5x$

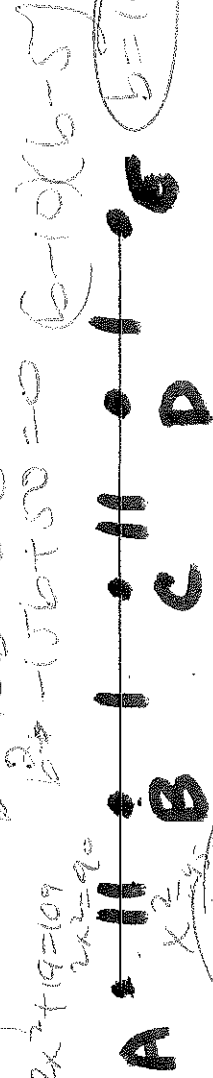
$2^2 + (4\sqrt{5})^2 = (5x)^2$

$4 + 20 \cdot 5 = 25x^2 = 80$

$25x^2 = 76$
 $x^2 = \frac{76}{25}$
 $x = \frac{2\sqrt{19}}{5}$

$b^2 + 15b + 50 = 150$
 $b^2 + 15b - 100 = 0$
 $(b+20)(b-5) = 0$
 $b = -20$ or $b = 5$

Please sketch and label!!

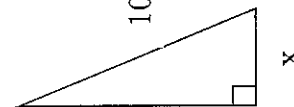


$x = \frac{1}{50}$

$50 + 4 = 124$

$5x = 120$

$y = 24$



$5\sqrt{3}$

$x^2 + (10)^2 = 100$

$x^2 + 75 = 100$

$x = 5$



4. Given each set of points, calculate PQ and the midpoint of segment PQ.

a) $P(-8, 5)$ and $Q(4, -7)$

$$\sqrt{a^2 + b^2} \quad PQ = 12\sqrt{2}$$

$$\sqrt{144 + 144} = \sqrt{288}$$

midpt $(-2, -1)$

b) $P(10, -1)$ and $Q(0, -13)$

$$\sqrt{10^2 + 12^2} \quad PQ = 2\sqrt{61}$$

$$\sqrt{244} \quad \sqrt{4 \cdot 61}$$

midpt $(5, -7)$

5. Answer each of the following statements with AT (always true), ST (sometimes true) or NT (never true).

AT a) Two points are collinear.

ST b) Three points are collinear.

ST c) Two lines are coplanar.

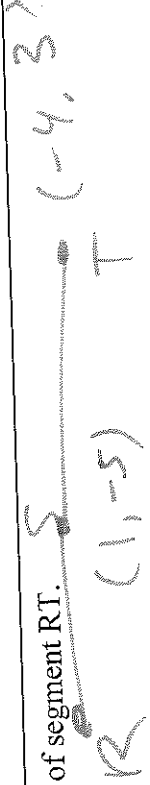
ST d) A line and a plane are coplanar.

AT e) When using three letters to name an angle, the vertex is the second letter named.

6. Find the coordinate of point R, given that S is the midpoint of segment RT.

$T(-4, 3)$ and $S(1, -5)$

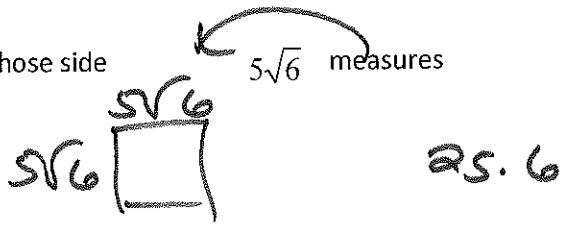
$(6, -13)$



7. Find the perimeter and area of a square whose side $5\sqrt{6}$ measures cm.

Perimeter $20\sqrt{6}$

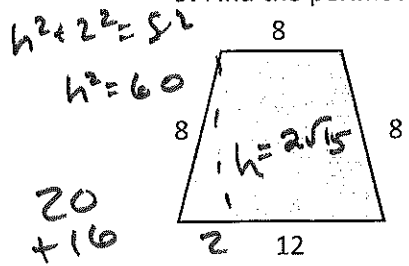
Area 150



8. Find the perimeter of an equilateral triangle whose side length measures $8 + 4\sqrt{3}$ ft.

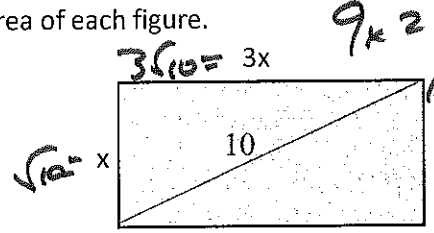
Perimeter $24 + 12\sqrt{3}$

9. Find the perimeter and area of each figure.



Perimeter 36

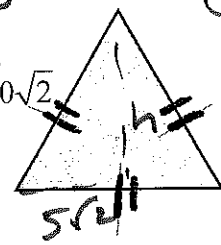
Area $20\sqrt{5}$



Rectangle

Perimeter $8\sqrt{10}$

Area $3 \cdot 10 = 30$



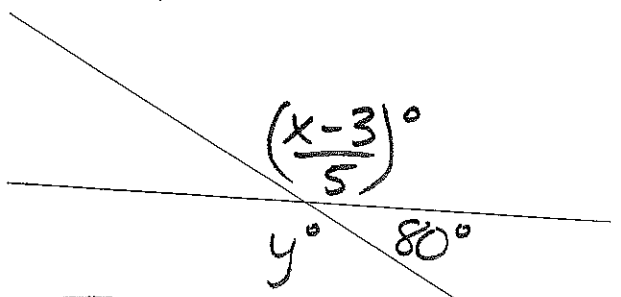
Perimeter $30\sqrt{2}$

Area $50\sqrt{3}$

$(5\sqrt{2})^2 + h^2 = (10\sqrt{2})^2$
 $50 + h^2 = 200$
 $h^2 = 150$
 $h = 5\sqrt{6}$
 $A = \frac{1}{2}bh = \frac{1}{2}(10\sqrt{2})(5\sqrt{6}) = 50\sqrt{3}$

10. Find the value of each variable.

a)

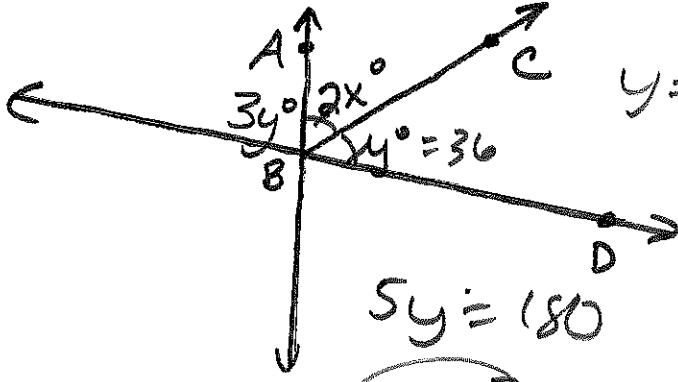


$y = 100$

$100 = \frac{x-3}{5}$

$503 = x$

b) Ray BC bisects Angle ABD



$5y = 180$

$y = 36$

$x = 18$

$y = 2x$

**SKETCHES

**USING A DIAGRAM TO ANSWER QUESTIONS

STUDY YOUR QUIZZES!!!!