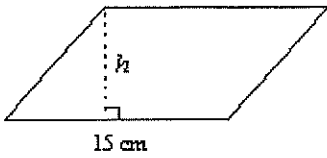# Geometry 10.1-10.3 Review

Name: **Key**   Hour:
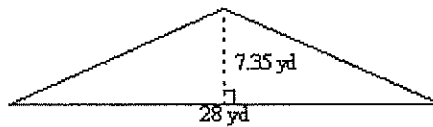
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1. The area of the parallelogram is 150cm². Find the height.

$150 = 15h$

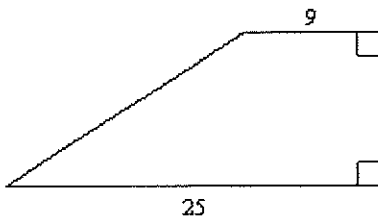$\boxed{h = 10\,cm}$

---

2. Find the area.

7.35 yd

28 yd

$A = \frac{1}{2}(7.35)(28)$

$\boxed{A = 102.9\,yd^2}$

---

3. Find the area.

9

10

25

$A = \frac{1}{2}(10)(9+25)$

$\boxed{A = 170\,units^2}$

---

4. Find the area.

20.8 in.

12.8 in.   20.6 in.

30.8 in.
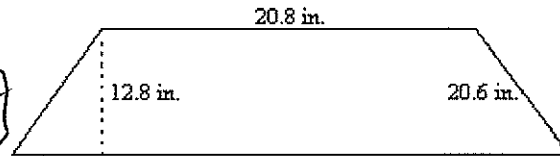
$A = \frac{1}{2}(12.8)(20.8 + 30.8)$

$\boxed{A = 330.24\,in^2}$

---

5. Find the area of the rhombus to the nearest tenth.

B

22

x

A $\quad$ 9 $\quad$ 9 $\quad$ C
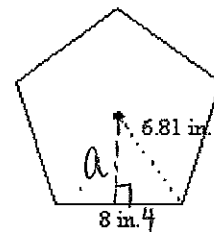
D
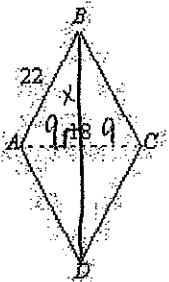
$x^2 + 9^2 = 22^2$

$x^2 = 403$

$x = 20.1$

$A = \frac{1}{2}(18)(40.15)$

$\boxed{A = 361.3\,units^2}$

---

6. Find the area of the regular polygon. Round your answer to the nearest tenth.

6.81 in.

a

8 in.

$A = \frac{1}{2}(5.511)(8 \times 5)$

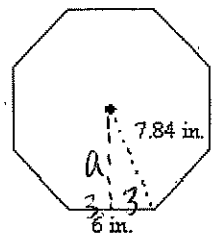$\boxed{A = 110.2\,in^2}$

$a^2 + 4^2 = 6.81^2$

$a^2 = 30.3761$

$a = 5.511$

---

7. Find the area of the regular polygon. Round your answer to the nearest tenth.

7.84 in.

a

3 | 3

6 in.

$A = \frac{1}{2}(7.243)(6 \times 8)$

$\boxed{A = 173.8\,in^2}$

$a^2 + 3^2 = 7.84^2$

$a^2 = 52.4656$

$a = 7.243$

---

8. Find the area.

8 cm

h   10 cm

9 cm   6 cm
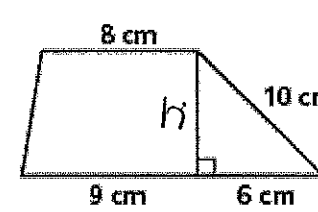
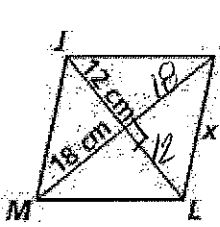$A = \frac{1}{2}(8)(8 + 15)$

$\boxed{A = 92\,cm^2}$

$h^2 + 6^2 = 10^2$

$h^2 = 64$

$h = 8$

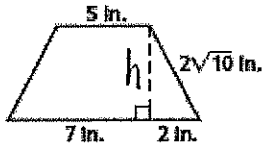**9.**

JKLM is a rhombus.
Find x to the nearest tenth.

$18^2 + 12^2 = x^2$

$x^2 = 468$

$\boxed{x = 21.6 \text{ cm}}$

(diagram: rhombus *JKLM* with 12 cm and 18 cm along diagonals, labeled 18, 12, x)

10.

Find the area of the trapezoid.

(diagram: trapezoid with top 5 in., height h, side $2\sqrt{10}$ in., bottom 7 in. and 2 in.)

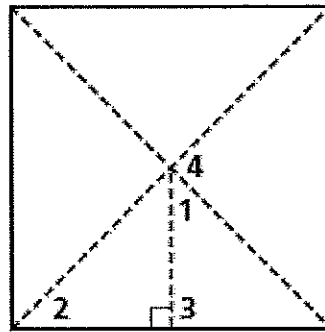$A = \frac{1}{2}(6)(5+9)$

$\boxed{A = 42 \text{ in}^2}$

$h^2 + 2^2 = (2\sqrt{10})^2$

$h^2 = 36$

$h = 6$

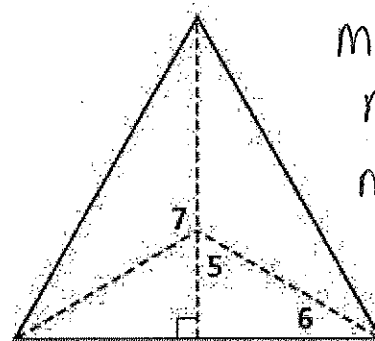**11.** Each regular polygon has radii and apothem as shown. Find the measures of the numbered angles.

a.

(diagram: square with diagonals and apothem, angles 1, 2, 3, 4)

$m\angle 1 = 45$

$m\angle 2 = 45$

$m\angle 3 = 90$

$m\angle 4 = 90$

b.

(diagram: triangle with apothem and radii, angles 5, 6, 7)

$m\angle 5 = 60$

$m\angle 6 = 30$

$m\angle 7 = 120$

11. Find the value of h in each parallelogram.

a.

(diagram: parallelogram with sides 8, 10, 7 and height h)

$7 \cdot 10 = 8h$

$70 = 8h$

$\boxed{h = 8.75}$

b.

(diagram: parallelogram with 4, 5, 4.3 and height h)
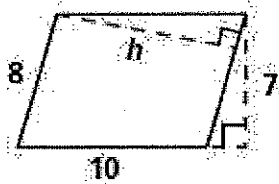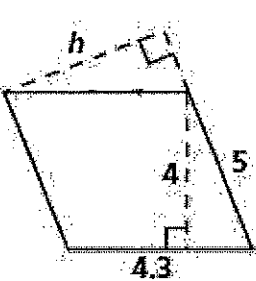
$4 \cdot 4.3 = 5h$

$17.2 = 5h$

$\boxed{h = 3.44}$

12. Find the area of the shaded region.

(diagram: triangle with height 8, base split into 5 and 4, shaded region)
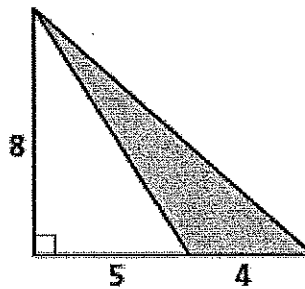
$A = \frac{1}{2}(4)(8)$

$\boxed{A = 16 \text{ units}^2}$

13. Find the area of a regular pentagon that measures 6 m on a side and has an apothem 4.1 m long.

$A = \frac{1}{2}(4.1)(6 \times 5)$

$\boxed{A = 61.5 \text{ m}^2}$

14. Find the area of a regular decagon with an apothem of 4 cm.

(diagram: angle with 4 and x labeled)

$\frac{360}{10} = \frac{36}{2} = 18$

$\tan 18 = \frac{x}{4}$

$x = 1.2997$

$A = \frac{1}{2}(4)(2.5994 \times 10) \boxed{= 51.99 \text{ cm}^2}$

a. 24 cm^2 b. 26 cm^2 c. 180 cm^2 d. 240 cm^2

Geometry 10.4-10.5 Review

Name: _____ Hour: ____

---

1. The areas of two similar triangles are 49 cm^2 and 16 cm^2. What is the ratio of the corresponding side lengths? Of the perimeters?
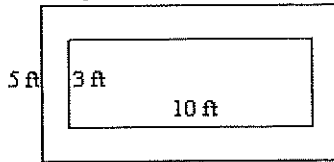
A.R = $\frac{49}{16}$

S.R = $\frac{7}{4}$

P.R = 7/4

2. The area of a regular octagon is 25 cm^2. What is the area of a regular octagon with sides four times as large?
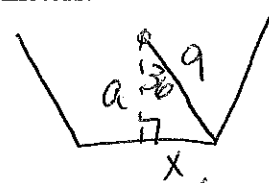
$\frac{1}{16} = \frac{25}{X}$

$\boxed{X = 400 \, cm^2}$

---

3. Find the ratio of the perimeter of the larger rectangle to the perimeter of the smaller rectangle.

5 ft   3 ft
          10 ft
          12 ft

P.R = $\frac{3}{5}$

4. Find the area of a regular pentagon with radius 9 meters.

$\cos 36 = \frac{a}{9}$

$a = 7.28$

$\sin 36 = \frac{x}{9}$

$X = 5.29$

Side = 10.58

$A = \frac{1}{2}(7.28)(10.58 \times 5)$

$\boxed{A = 192.6 \, m^2}$

---

5. Find the area of the triangle.

B
140°
9 cm   8 cm
A   C
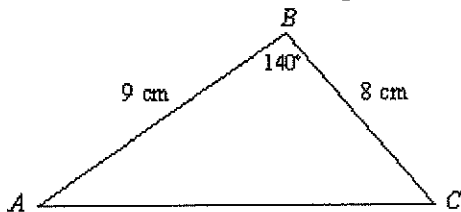
$A = \frac{1}{2}(9)(8)\sin 140$

$\boxed{A = 23.1 \, cm^2}$

6. Find the area of a regular octagon with perimeter 48 cm.
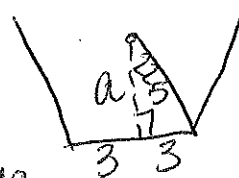
$A = \frac{1}{2}(7.24)(48)$

$\boxed{A = 173.76 \, cm^2}$

$\frac{48}{8} = 6$

$\tan 22.5 = \frac{3}{a}$

$a = 7.24$

---

7. $\triangle RST \sim \triangle XYZ$ and $RS = \frac{3}{2} XY$. Which of the following is true?

A. The ratio of the perimeters of $\triangle RST$ to $\triangle XYZ$ is $\frac{9}{4}$.

B. $m\angle R = \frac{3}{2} m\angle X$

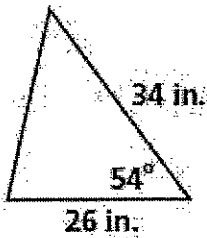C. The ratio of the areas of $\triangle XYZ$ to $\triangle RST$ is $\frac{9}{4}$.

D. None of the above.

8. The shorter sides of a rectangle are 6 ft. The shorter sides of a similar rectangle are 9 ft. The area of the smaller rectangle is 48 ft^2. What is the area of the larger rectangle?

$\frac{6^2}{9^2} = \frac{48}{X}$

$\boxed{X = 108 \, ft^2}$

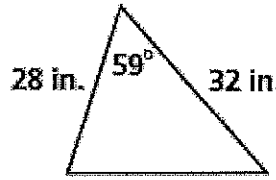| 9. Find the area of the triangle. Round your answer to the nearest tenth.	10. Find the area of the triangle. Round your answer to the nearest tenth.

9.

$A = \frac{1}{2}(34)(26)\sin 54$

34 in.

$A = 357.6 \text{ in}^2$

54°

26 in.

10.

$A = \frac{1}{2}(28)(32)\sin 59$

28 in. 59° 32 in.

$A = 384.0 \text{ in}^2$

---

11. Find the area of a regular octagon with apothem 9 ft.
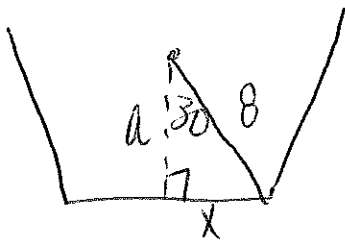
9

9

x
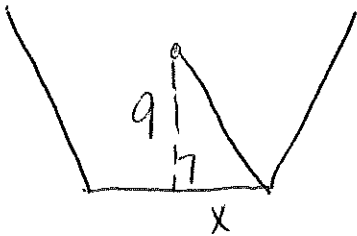
$Tan\ 22.5 = \frac{x}{9}$

$x = 3.73$

$Side = 7.46$

$A = \frac{1}{2}(9)(7.46 \times 8)$

$A = 268.6 \text{ ft}^2$

$\frac{360}{8} = \frac{45}{2} = 22.5$

---

12. Find the area of a regular hexagon with radius 8 in.

a 30 8

7

x

$a = 4\sqrt{3}$

$x = 4$

$Side = 8$

$A = \frac{1}{2}(4\sqrt{3})(8 \times 6)$

$A = 96\sqrt{3} \text{ in}^2$

$\frac{360}{6} = \frac{60}{2} = 30$

---

13. Find the area of a regular hexagon with perimeter 60 cm.

a 30

5 5

$a = 5\sqrt{3}$

$A = \frac{1}{2}(5\sqrt{3})(60)$

$= 150\sqrt{3} \text{ cm}^2$

$\frac{60}{6} = 10$
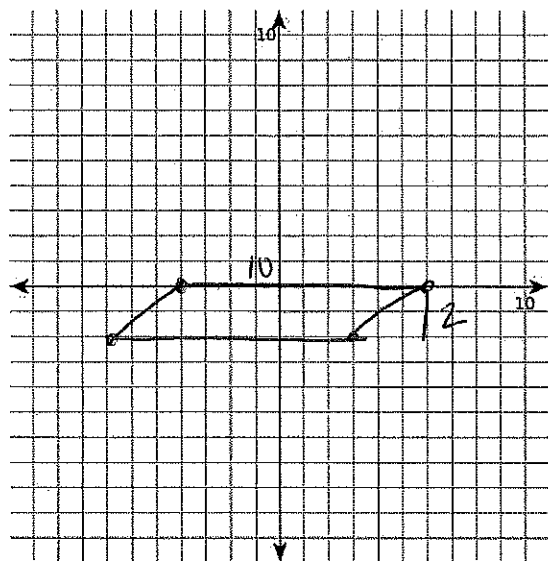
Geometry
7.6 Perimeter and Area of Quadrilaterals

NAME: _____

Date: _____ Period: _____

Find the PERIMETER and AREA of each figure. Be sure to SHOW ALL WORK!
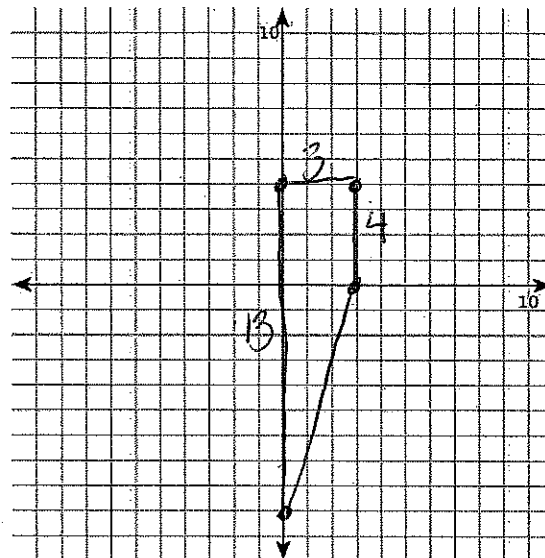
1) Parallelogram with vertices at:
(-4, 0), (6, 0), (3, -2), and (-7, -2).

2) Trapezoid with vertices at:
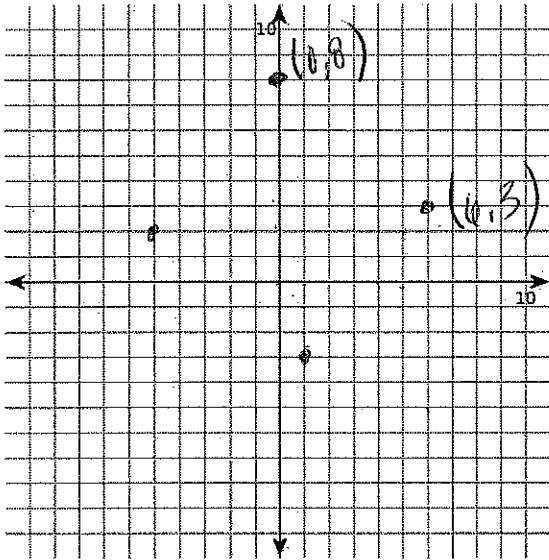(0, 4), (3, 4), (3, 0), and (0, -9)

Perimeter:_____

Perimeter:_____

Area: _20 units²_

Area: _25.5 units²_ $A = \frac{1}{2}(3)(4+13)$

3) Square with vertices at:
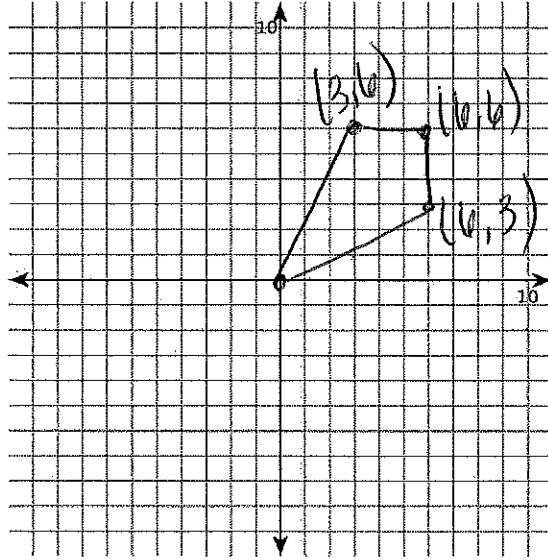(0, 8), (6, 3), (1, -3), and (5, 2).

Perimeter:_____

Area: 61 units^2

$$d = \sqrt{(6-0)^2 + (3-8)^2}$$
$$= \sqrt{36 + 25}$$
$$= \sqrt{61}$$

4) Kite with vertices at:
(0, 0), (3, 6), (6, 3), and (6, 6)

Perimeter:_____

Area: 18 units^2

$$d = \sqrt{(6-3)^2 + (3-6)^2}$$
$$= \sqrt{9 + 9}$$
$$= \sqrt{18}$$

$$A = \frac{1}{2}(\sqrt{18})(\sqrt{72})$$

$$d = \sqrt{(6-0)^2 + (6-0)^2}$$
$$= \sqrt{36 + 36}$$
$$= \sqrt{72}$$