



REVISION SHEET - Term 3

Grade : 9

Section : A,B,C

Date : / 05 / 2016

Name : Answer Key

Subject : Mathematics

Q1) Factor by GCF.

- | | | |
|---|---|--|
| 1. $8x^2 + 10x = 2x(4x + 5)$ | 2. $12y - 16 = 4(3y - 4)$ | 3. $-15d^5 + 45d^3 = -15d^3(d^2 - 3)$ |
| 4. $13a + 20b = \text{prime}$ | 5. $c^3 + c^2 - c = c(c^2 + c - 1)$ | 6. $6n^2 - 30n + 42 = 6(n^2 - 5n + 7)$ |
| 7. $-7m^2 - 10m + 17 = \text{prime}$ | 8. $18p^3 - 63p^2 - 9p = 9p(2p^2 - 7p - 1)$ | 9. $18x^2 - 50y^2 = 2(9x^2 - 25y^2)$ |
| 10. $100z^9 + 50z^6 - 75z^5 = 25z^5(4z^4 + 2z - 3)$ | 11. $36rs^2 - 108r^2s^3 = 36rs^2(1 - 3rs)$ | 12. $36k - 30 = 6(6k - 5)$ |

Q2) Factor each trinomial:

- | | |
|---------------------------------------|--------------------------------------|
| 1. $x^2 + 5x + 4 = (x + 1)(x + 4)$ | 2. $x^2 + 12x + 32 = (x + 4)(x + 8)$ |
| 3. $x^2 + 15x + 50 = (x + 5)(x + 10)$ | 4. $a^2 - 5a - 24 = (a + 3)(a - 8)$ |
| 5. $x^2 - x - 20 = (x + 4)(x - 5)$ | 6. $r^2 + 2r - 48 = (r - 6)(r + 8)$ |

$$7. x^2+6x-72 = (x+12)(x-6)$$

$$8. d^2+2d+80 = \text{prime}$$

$$9. x^2-6x+9 = (x-3)(x-3) \\ = (x-3)^2$$

$$10. m^2+15m+54 = (m+9)(m+6)$$

$$11. x^2-33x+32 = (x-1)(x-32)$$

$$12. x^2-12x+20 = (x-2)(x-10)$$

Q3) factor by difference of 2 squares

$$1. x^2-1 = (x+1)(x-1)$$

$$2. 25x^2-4 = (5x+2)(5x-2)$$

$$3. a^2b^2-9 = (ab+3)(ab-3)$$

$$4. 36-x^2 = (6+x)(6-x)$$

$$5. 81y^2-25 = (9y+5)(9y-5)$$

$$6. 64a^2-1 = (8a+1)(8a-1)$$

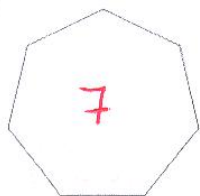
Name _____

Date _____ Period _____

Introduction to Polygons

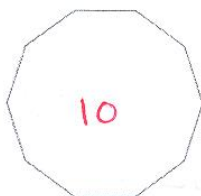
Write the name of each polygon.

1)



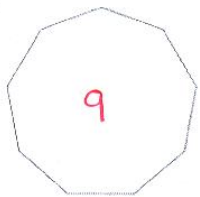
Heptagon

2)



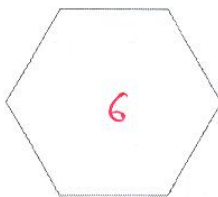
Decagon

3)



Nonagon

4)



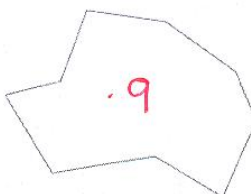
Hexagon

5)



pentagon

6)



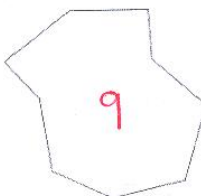
nonagon

7)



Hexagon

8)



Nonagon

State if each polygon is concave or convex.

9)



Convex

10)



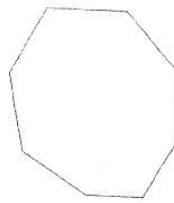
Convex

11)



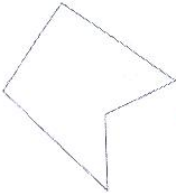
Concave

12)



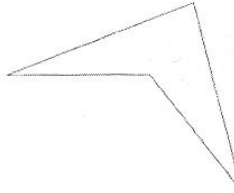
Convex

13)



Concave

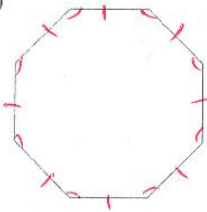
14)



Concave

State if each polygon is regular or not.

15)



regular

16)



not

17)



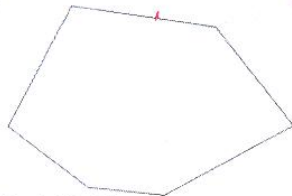
regular

18)



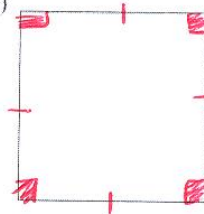
not

19)



not

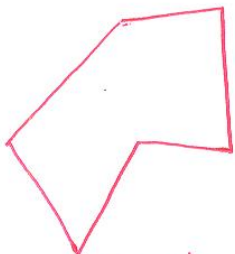
20)



regular

Critical thinking questions:

21) Sketch a concave hexagon.



6-sides

22) Which are impossible:

Regular convex octagon

Concave trapezoid → impossible

Convex irregular 20-gon

Concave triangle → impossible

Concave equilateral pentagon

Formula

$$\text{sum of interior } \angle s = (n-2) \cdot 180$$

↳ # of sides
Name _____

Polygons and Angles

Date _____ Period _____

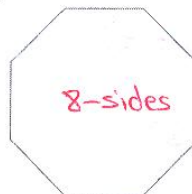
Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

1)



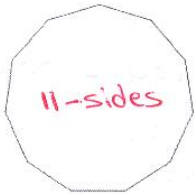
$$\frac{540}{5} = 108^\circ$$

2)



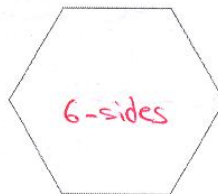
$$\frac{1080}{8} = 135^\circ$$

3)



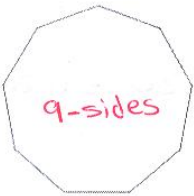
$$\frac{1620}{11} = 147.3^\circ$$

4)



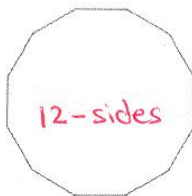
$$\frac{720}{6} = 120^\circ$$

5)



$$\frac{1260}{9} = 140^\circ$$

6)



$$\frac{1800}{12} = 150^\circ$$

7) regular 24-gon

$$\frac{3960}{24} = 165^\circ$$

8) regular quadrilateral

$$\frac{360}{4} = 90^\circ$$

9) regular 23-gon

$$\frac{3780}{23} = 163.3^\circ$$

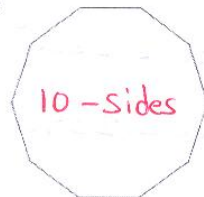
10) regular 16-gon

$$\frac{2520}{16} = 157.5^\circ$$

Find the measure of one exterior angle in each polygon. Round your answer to the nearest tenth if necessary.

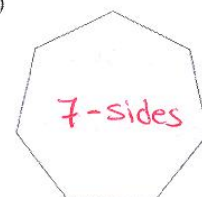
$$\text{sum of exterior } \angle s = 360^\circ$$

11)



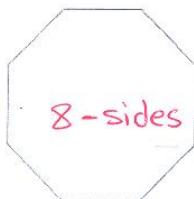
$$\frac{360}{10} = 36^\circ$$

12)



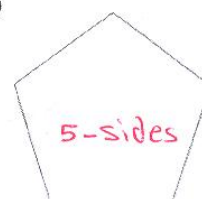
$$\frac{360}{7} = 51.4^\circ$$

13)



$$\frac{360}{8} = 45^\circ$$

14)



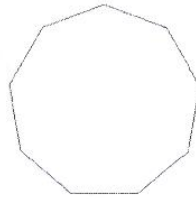
$$\frac{360}{5} = 72^\circ$$

15)



$$\frac{360}{11} = 32.7^\circ$$

16)



$$\frac{360}{9} = 40^\circ$$

17) regular 13-gon $\frac{360}{13} = 27.7^\circ$

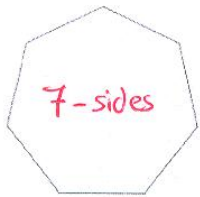
18) regular 16-gon $\frac{360}{16} = 22.5^\circ$

19) regular 20-gon $\frac{360}{20} = 18^\circ$

20) regular 23-gon $\frac{360}{23} = 15.7^\circ$

Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

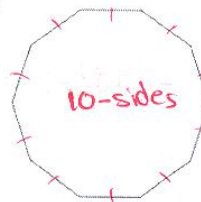
21)



$$5 \cdot 180 = 900^\circ$$

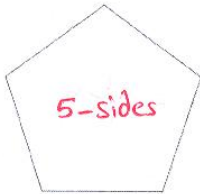
$$(n-2) \cdot 180$$

22)



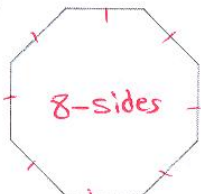
$$8 \cdot 180^\circ = 1440^\circ$$

23)



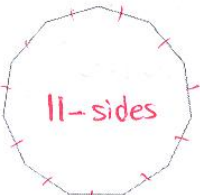
$$3 \cdot 180 = 540^\circ$$

24)



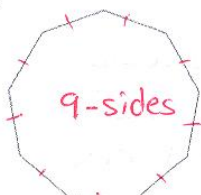
$$6 \cdot 180^\circ = 1080^\circ$$

25)



$$9 \cdot 180 = 1620^\circ$$

26)



$$7 \cdot 180^\circ = 1260^\circ$$

27) regular quadrilateral $2 \cdot 180^\circ = 360^\circ$

28) regular 18-gon $16 \cdot 180 = 2880^\circ$

29) regular dodecagon $10 \cdot 180^\circ = 1800^\circ$
12-gon

30) regular 15-gon $13 \cdot 180 = 2340^\circ$

Critical thinking questions:

31) What is the exterior angle sum of a 500-gon?

$$360^\circ$$

32) Is there a regular polygon with an interior angle sum of 9000°? If so, what is it?

Yes, there is

$$n = \frac{\text{interior } \angle \text{ sum} + 2}{180}$$

$$= \frac{9000}{180} + 2$$

-6-

$$= 50 + 2$$

$$= 52$$

52-gon

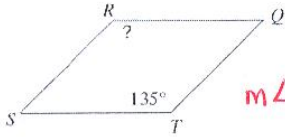
Name _____

Date _____ Period _____

Properties of Parallelograms

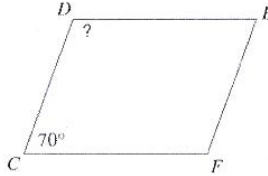
Find the measurement indicated in each parallelogram.

1)



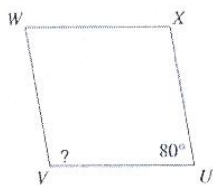
$$m\angle R = 135^\circ$$

2)



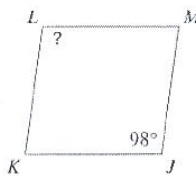
$$m\angle D = 180 - 70 = 110^\circ$$

3)



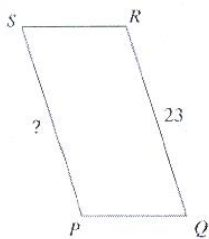
$$m\angle V = 180 - 80 = 100^\circ$$

4)



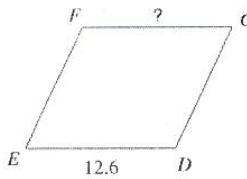
$$m\angle L = 98^\circ$$

5)



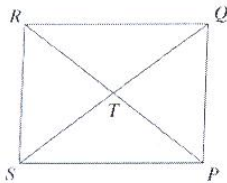
$$SP = 23$$

6)



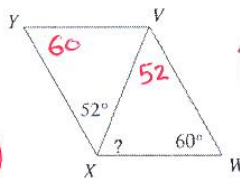
$$FC = 12.6$$

7) $RT = 19.8$
Find RP



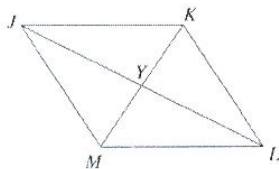
$$RP = 2(RT) = 2(19.8) = 39.6$$

8)



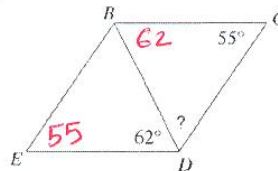
$$\begin{aligned} ? &= 180 - (52 + 60) \\ &= 180 - 112 \\ &= 68^\circ \end{aligned}$$

9) $KM = 23.4$
Find YM



$$\begin{aligned} YM &= \frac{1}{2} KM \\ &= \frac{1}{2} (23.4) \\ &= 11.7 \end{aligned}$$

10)



$$\begin{aligned} ? &= 180 - (62 + 55) \\ &= 180 - 117 \\ &= 63^\circ \end{aligned}$$