

Geometry Development 3.2 (KEY)

1) Give two questions for simplifying roots. Simplify each expression.

- Is the radicand perfect?

2) $\sqrt{121} = 11$

3) $\sqrt{225} = 15$

4) $\sqrt{90} = \sqrt{9 \cdot 10}$

$= 3\sqrt{10}$

- If not, does it have a perfect factor?

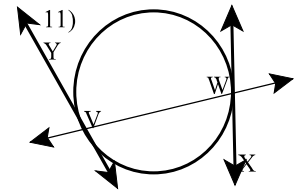
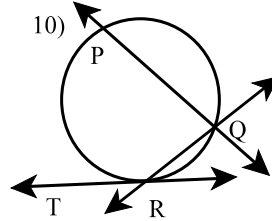
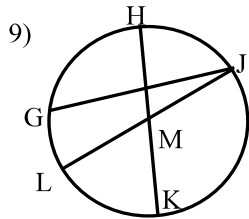
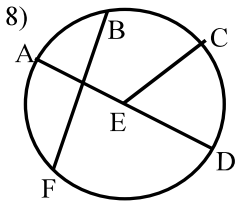
5) $\sqrt{150} = \sqrt{25 \cdot 6}$
 $= 5\sqrt{6}$

6) $\sqrt{252} = \sqrt{36 \cdot 7}$
 $= 6\sqrt{7}$

7) $\sqrt{891} = \sqrt{81 \cdot 11}$
 $= 9\sqrt{11}$

Identify the radii, chords, and diameters.

Identify the secants, and tangents.



r: $\overline{AE}, \overline{DE}, \overline{CE}$

r: $\overline{ML}, \overline{MK}, \overline{MH}, \overline{MJ}$

Sec: $\overline{PQ}, \overline{QR}$

Sec: \overline{VW}

c: $\overline{FB}, \overline{AD}$ **d:** \overline{AD}

c: $\overline{GJ}, \overline{LJ}, \overline{HK}$ **d:** $\overline{HK}, \overline{LJ}$

Tan: \overline{TR}

Tan: $\overline{YV}, \overline{WX}$

Simplify.

12) $\frac{3}{5} \cdot \frac{4}{9} = \frac{12}{45}$
 $= \frac{4}{15}$

13) $4\frac{5}{6} \div \frac{2}{3} = \frac{29}{6} \cdot \frac{3}{2}$
 $= \frac{87}{12} = \frac{29}{4} = 7\frac{1}{4}$

14) $\frac{1}{8} + \frac{5}{8} = \frac{6}{8}$
 $= \frac{3}{4}$

15) $\frac{3}{5} - \frac{1}{4} = \frac{12}{20} - \frac{5}{20}$
 $= \frac{7}{20}$

16) $2\frac{7}{8} + 6\frac{1}{6} = \frac{23}{8} + \frac{37}{6}$
 $= \frac{69}{24} + \frac{148}{24} = \frac{217}{24} = 9\frac{1}{24}$

Give the interior and exterior angle measure.

17) Heptagon
Int. = $(7 - 2)180^\circ$
Int. = 900°
Ext. = 360°

18) 23-gon
Int. = $(23 - 2)180^\circ$
Int. = $3,780^\circ$
Ext. = 360°

Give the number of diagonals in each polygon.

19) Nonagon
diags = $\frac{1}{2}(9)(9 - 3)$
= 27 diags.

20) 15-gon
diags = $\frac{1}{2}(15)(15 - 3)$
= 90 diags.

- 21) $\frac{-15}{19}$ 22) $\frac{4}{37}$ 23) $\frac{26}{71}$ 24) $\frac{-83}{-49}$

Give the length and midpoint of each segment below.

L = $19 - (-15) = 34$

L = $37 - 4 = 33$

L = $71 - 26 = 45$

L = $(-49) - (-83) = 34$

Mid = $(19 + (-15))/2 = 2$

M = $(37 + 4)/2 = 20.5$

M = $(71 + 26)/2 = 48.5$

M = $(-49 + (-83))/2 = -66$

Complete each pattern.

25) 36, 12, 6, 2, 1

26) -5, 3, -2, 1, -1, 0, -1

27) 4, 7, 10, 13, 16

28) 4, 16, 36, 64, 100

List each point below and give its coordinates.

29)

H

B

C

-5

I

D



30

R

V

Q

M

S

10⁻⁵

P

N

5

10

T

U

O

- A (2, 3)
- B (-2, 4)
- C (-2, 1)
- D (-2, -5)
- E (4, -3)
- F (4, 0)
- G (6, 4)
- H (-5, 5)
- I (-4, -2)
- L (0, -4)

- M (3, 3)
- N (4, 0)
- O (5, -3)
- P (-4, 0)
- Q (-3, 2)
- R (-1, 4)
- S (5, 2)
- T (-1, -1)
- U (-2, -4)