Sample Documents

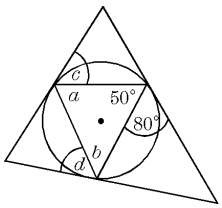
Canadian Math Gr. 11–12
(CM1)

EducAide Software

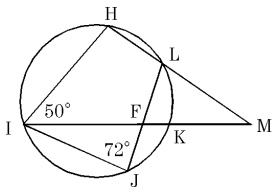
Math 11 | Geometry Review
Mr. Murphy | 1/12/99

1. Find: $\angle b + \angle c + \angle d$

a) 130° b) 150° c) 180°
d) 210° e) 240°



2. Given the diagram shown, find the measure of each of the following.



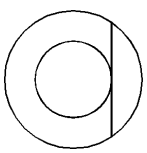
a) $\angle$**HLK** b) $\angle$**IKL** c) $\angle$**KML**

3. During an archeological dig part of an old wheel was uncovered. In order to find the original diameter of the wheel the archeologist marked 3 points **A**, **B**, and **C** on the rim so that chord **AB** was congruent to chord **BC**. If **AB** = 10 cm and **AC** = 16 cm, what was the original diameter of the wheel?

4. $\triangle$**ABC** is inscribed in a circle. **T** is a point on the extension of **BC**. If $m\angle$**BAC** $= 105^\circ$, $m\angle$**CAT** $= 20^\circ$, and $m\angle$**ATB** $= 30^\circ$, what is the ratio of minor arc $\overset{\frown}{\mathbf{AB}}$ to minor arc $\overset{\frown}{\mathbf{AC}}$?

5. Chord AB, 48 cm long, is tangent to the smaller of two concentric circles, as shown in the diagram. If the radius of the small circle is 10 cm, find the radius of the large circle.

a) 20 cm b) 24 cm c) 25 cm
d) 26 cm e) 52 cm

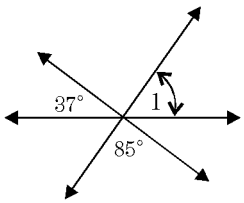


6. What is the diameter of a circle in which a chord 24 cm long is 9 cm from the centre?

a) 10 cm b) 12 cm c) 13 cm
d) 30 cm e) 36 cm

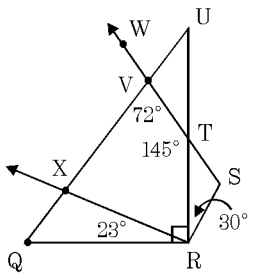
7. In the diagram, what is the measure of $\angle 1$?

a) 22° b) 37° c) 58°
d) 65° e) 74°

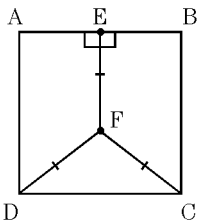


8. In the diagram shown what is the measure of $\angle$**VTU**?

a) 35° b) 41°
c) 52° d) 76°
e) 115°



9. Square **ABCD** has sides of 20 cm. If **EF** = **FD** = **FC**, and **EF** $\perp$ **AB**, then how long is **FD**?



10. What is the approximate perimeter of an equilateral triangle that is inscribed in a circle of radius 8 cm?

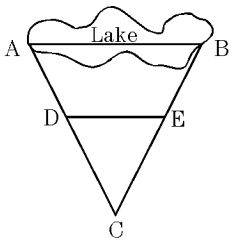
a) 24 cm b) 36 cm c) 40.2 cm
d) 41.6 cm e) 48 cm

11. If we have **AB** as a diameter of a circle where **A** is $(6, 2)$ and **B** is $(8, 4)$, then what is the equation of the circle?

12. A chord 12 cm long is drawn in a circle of diameter 12.2 cm. How far from the centre of the circle is the chord?

a) 1.1 cm b) 6.1 cm c) $\sqrt{112.84}$ cm
d) $\sqrt{139.84}$ cm e) 5 cm

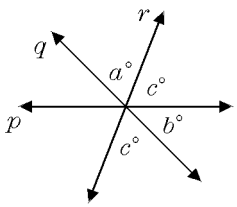
13. A enterprising young lady wanted to know the distance across a small lake. She located a point **C** and then laid off points **D** and **E** so they were the midpoints of **AC** and **BC** respectively. She found **DE** to be 43 m. How wide was the lake?



14. Prove that if two circles intersect, the common chord produced, bisects the common external tangent.

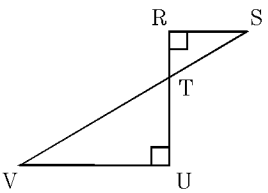
15. If the measure of $m\angle c = 70^\circ$, then what is the measure of $\angle b$?

a) 40° b) 45°
c) 70° d) 75°
e) not enough information

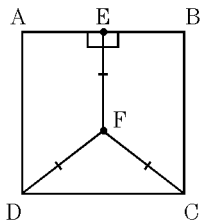


16. In the figure, $\mathbf{RS} = 6$, $\mathbf{RT} = 4$, and $\mathbf{TU} = 10$. What is the length of $\mathbf{VT}$?

a) $2\sqrt{13}$ b) $\sqrt{127}$
c) $5\sqrt{13}$ d) 10
e) 15

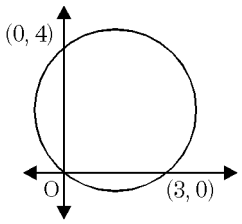


17. Square **ABCD** has sides of 20 cm. If $\mathbf{EF} = \mathbf{FD} = \mathbf{FC}$, and $\mathbf{EF} \perp \mathbf{AB}$, then what is the measure of $\angle\mathbf{FDC}$ to 1 decimal place?



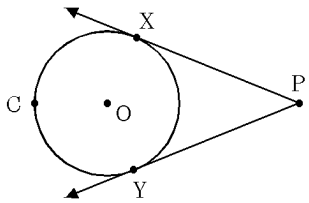
18. In the diagram the circle passes through the origin, the point $(3, 0)$ and the point $(0, 4)$. What is the radius of the circle?

a) 1.5 b) 2 c) 2.5
d) 3.5 e) 5



19. In the figure, $\overrightarrow{\mathbf{PX}}$ and $\overrightarrow{\mathbf{PY}}$ are drawn to the circle. If $m\overset{\frown}{\mathbf{XY}} = 120^\circ$, then what is the measure of angle **P**?

a) 40° b) 60°
c) 80° d) 100°
e) 120°



20. What is the approximate perimeter of an equilateral triangle that is inscribed in a circle of radius 10 cm?

a) 17.3 cm b) 24 cm c) 30.0 cm
d) 41.6 cm e) 52.0 cm

21. The graphs of $x^2 + y^2 = 8$ and $y = \sqrt{7}x^2$ intersect at two points. Which of the following is a possible point of intersection?

a) $(1, -\sqrt{7})$ b) $(-1, -\sqrt{7})$
c) $(1, \sqrt{7})$ d) $\left(-\sqrt{\frac{8}{7}}, -\sqrt{8}\right)$
e) $\left(\sqrt{\frac{8}{7}}, \sqrt{8}\right)$

22. $\triangle\mathbf{PQR}$ is an equilateral triangle with a 60° angle at **P**. If **PT** is a median of the triangle, which angle has the same measure as $\angle\mathbf{QPT}$?

a) $\angle\mathbf{PQR}$ b) $\angle\mathbf{RTP}$ c) $\angle\mathbf{QRP}$
d) $\angle\mathbf{RPT}$ e) $\angle\mathbf{TRP}$

Math 11 Geometry Review Mr. Murphy 1/12/99

Answer List

1.	b	2.		3.	$\frac{62}{3}$ cm
4.	2 : 1	5.	d	6.	d
7.	c	8.	a	9.	12.5 cm
10.	d	11.	$(x-7)^2+(y-3)^2=2$	12.	a
13.	86 m	14.	[proof]	15.	a
16.	c	17.	36.9°	18.	c
19.	b	20.	e	21.	c
22.	d				

Catalog List

1.	CM1 JB 53	2.		3.	CM1 JC 42
4.	CM1 JC 37	5.	CM1 JC 9	6.	CM1 JB 4
7.	CM1 JA 7	8.	CM1 JA 39	9.	CM1 JA 71
10.	CM1 JC 13	11.	CM1 JC 28	12.	CM1 JC 5
13.	CM1 JC 40	14.	CM1 JD 94	15.	CM1 JA 5
16.	CM1 JA 48	17.	CM1 JA 73	18.	CM1 JB 5
19.	CM1 JB 59	20.	CM1 JC 14	21.	CM1 JC 22
22.	CM1 JD 10				

Math 30 Name _____

Worksheet #12 ID # _____ Date _____

1. Determine the first three terms of the sequence whose general term is $t_n = \dfrac{2n}{n+1}$.

a) 1, $\frac{4}{3}$, $\frac{3}{2}$ b) $\frac{4}{3}$, $\frac{5}{4}$, $\frac{6}{5}$ c) 0, 1, $\frac{4}{3}$

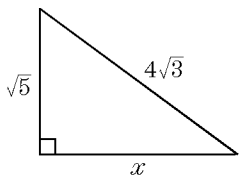
d) $\frac{4}{3}$, $\frac{3}{2}$, $\frac{8}{5}$ e) 1, $\frac{1}{2}$, $\frac{1}{3}$

2. Determine the exact length of side x in the triangle.

a) $\sqrt{7}$ b) $\sqrt{17}$

c) $\sqrt{23}$ d) $\sqrt{43}$

e) $\sqrt{53}$



3. Find the values of A and B if $\dfrac{7x+4}{x^2+x-6} = \dfrac{A}{x+3} + \dfrac{B}{x-2}$.

4. If $f(x) = \begin{cases} 2 & \text{for } x > 0, \\ 0 & \text{for } x = 0, \\ -2 & \text{for } x < 0, \end{cases}$ then what is the value of $f(-5) + f(-13)$?

a) -18 b) -4 c) 0 d) 4 e) 8

5. The following could be the graph of:

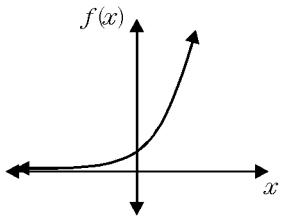
a) $y = \left(\frac{1}{2}\right)^x$

b) $y = x^2$

c) $y = 2^x$

d) $y = (-2)^x$

e) $y = (-2)^{-x}$

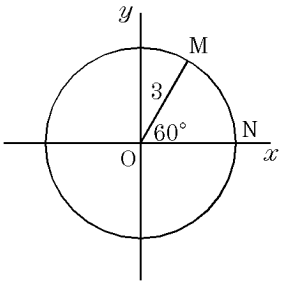


6. What is the x-coordinate of **M**?

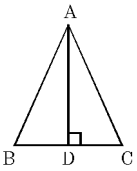
a) $\frac{3}{2}$ b) $\frac{3\sqrt{2}}{2}$

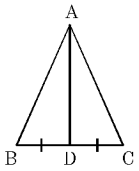
c) $\frac{9}{2}$ d) $\frac{9\sqrt{3}}{2}$

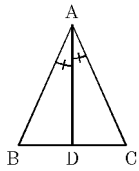
e) $3\sqrt{3}$

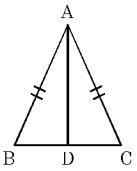


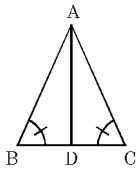
7. Which of the following diagrams illustrates segment **AD** as an angle bisector?

a) 

b) 

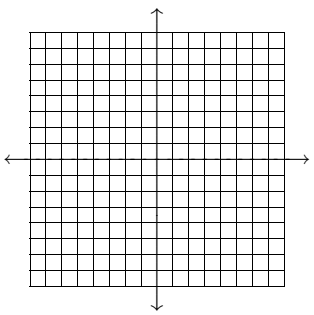
c) 

d) 

e) 

8. The table shown was made in order to sketch the graph of $y = f(x)$. Use this information to sketch the graph of $y = f(x)$. Mark any critical points.

x	-4	-3	-1	0	1
$f(x)$		-32		-5	
$f'(x)$	$-$	0	$+$	0	$+$



Math 30 Worksheet #12 Mr. Murray 1/6/99

Answer List

1. a
2. d
3. $A = 2$, $B = 5$
4. b
5. c
6. a
7. c
8. [graph]

Catalog List

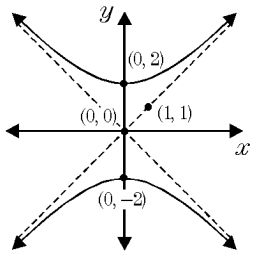
1. CM1 QA 12
2. CM1 BC 7
3. CM1 DE 75
4. CM1 EA 56
5. CM1 EB 3
6. CM1 GC 7
7. CM1 JD 3
8. CM1 RG 25

What is the equation of the given hyperbola?

a) $\frac{y^2}{4} - \frac{x^2}{4} = 1$ b) $\frac{y^2}{2} - x^2 = 1$

c) $\frac{y^2}{2} - \frac{x^2}{2} = 1$ d) $\frac{y^2}{4} - x^2 = 1$

e) $\frac{y^2}{2} - \frac{x^2}{4} = 1$



Electric current flowing through wire produces heat that varies jointly as the resistance of the wire and the square of the current. The resistance of two wires are in the ratio $2:3$. What current passing through the second wire will produce the *same amount* of heat as a current of 6 amperes through the first wire?

Write the equation of the parabola that opens up, has a vertex $V(3, -3)$, and is congruent to $y = \frac{1}{3}x^2$. Answer in the form $y = a(x-h)^2 + k$.

a) $y = \frac{1}{3}(x+3)^2 + 3$ b) $y = -\frac{1}{3}(x+3)^2 - 3$

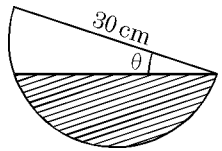
c) $y = \frac{1}{3}(x-3)^2 - 3$ d) $y = \frac{1}{3}(x+3)^2 - 3$

e) $y = \frac{1}{3}x^2 - 3$

Water in a hemispherical bowl with a diameter of 30 cm begins to pour out when the bowl is tilted to an angle θ equal to 17°. How deep is the water in the bowl? Round off your answer to the nearest tenth of a centimetre.

a) 4.4 b) 5.7 c) 10.4

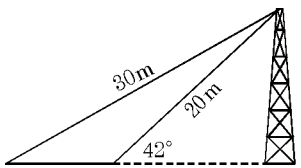
d) 10.6 e) 25.6



Wires of lengths 20 m and 30 m extend from the top of a tower to the ground on the same side of the tower as shown in the diagram. The shorter wire makes an angle of 42° with the ground. What angle do the wires make with each other?

a) 15.5° b) 26.5° c) 48.2°

d) 63.5° e) 74.5°



In a randomly selected sample of 20 Vancouver secondary school students it is found that 8 of the students had part-time jobs. Based upon this sample, what percentage range (at the 90% confidence level) of the entire Vancouver secondary school population can be expected to have part-time jobs?

a) 15% to 70% b) 16% to 70% c) 20% to 60%

d) 22% to 60% e) 32% to 48%