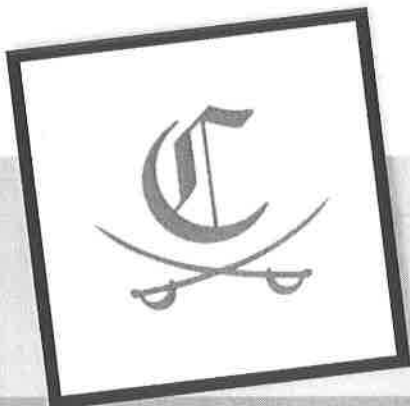


# **International Baccalaureate Math Studies - Standard Level Summer Assignment 2019-20**

**Mrs. Russell – CHS Math Dept.**

1. Please write only your final answers on the worksheets and attach separate papers showing all of your work. Use correct units when applicable.
2. You will need a scientific calculator to complete some problems but NOT a graphing calculator.
3. This packet is due on the first day of class in July. Put your name on each section of the packet.
4. IB Math Studies is a rigorous course designed to challenge the student across several math disciplines.
5. My email is [vicki.russell@pcsstn.com](mailto:vicki.russell@pcsstn.com).
6. Enjoy the summer!



## Part 1 - Numbers

Date \_\_\_\_\_

**Evaluate each expression.**

1)  $6 \times 2 + (2 + 1) + 3$

2)  $(10 - (1 + 4) + 5) \div 2$

3)  $6^2 - (3 + 5 + 5)$

4)  $(1^3 + 6 - 2) \times 4$

5)  $4^2 - 3 - (2 + 1)$

6)  $5 - (1 - 5 \div 5) - 1$

7)  $10 \div 2 - (8 - 4) \div 4$

8)  $15 \div (3 - (1 + 2) + 5)$

9)  $1 - \frac{1}{4} + 3\frac{1}{2}$

10)  $3\frac{1}{3} - \left(2\frac{5}{6} - 2\frac{2}{3}\right)$

11)  $\left(1\frac{5}{6} + 1\frac{2}{5}\right) \times \frac{3}{2}$

12)  $3\frac{1}{2} - \frac{2}{3} - \frac{5}{4}$

13)  $2^3 \times 3^3 \times 5$

14)  $\sqrt{3^2 + 4^2}$

15)  $(\sqrt{4})^2$

16)  $\sqrt{4^3}$

17) List all of the factors:

- a. 18
- b. 27
- c. 30
- d. 28
- e. 78

18) Write as products of prime factors:

- a. 36
- b. 60
- c. 54
- d. 32
- e. 112

19) Find the LCM:

- a. 8 and 20
- b. 6, 10, and 16

20) Find the GCF:

- a. 56 and 48
- b. 36, 54, and 90

## Part 2 - Algebra

Date \_\_\_\_\_

**Simplify each expression.**

1)  $7(5 + 6r)$

2)  $-7v + 5v$

3)  $-7(-8p + 3) - 10p$

4)  $9(1 - 8b) + 5b(2 + 4b)$

**Factor the common factor out of each expression.**

5)  $40k^2h^7 + 45k^5h^2 + 35k^2j^2$

6)  $80x^3z^2y - 90x^4z^3 - 60x^2z^3$

**Solve each equation for the indicated variable.**

7)  $c - a = b - \frac{r}{d}$ , for  $a$

8)  $ac = b - \frac{r}{d}$ , for  $a$

9)  $u = ak + w - v$ , for  $a$

10)  $ak = b - \frac{v}{w}$ , for  $a$

11)  $k - x = y + vw$ , for  $x$

**Solve each equation.**

12)  $-122 = 4 + 7n$

13)  $1 = \frac{7 + n}{10}$

14)  $-4n + 9 = -15$

15)  $63 = -9(n + 2)$

16)  $8b - 3 = 149$

17)  $\frac{p}{10} + 5 = 7$

18)  $8(-m + 4) - 5 = 83$

19)  $86 = -2(-5n - 3)$

20)  $n + 3(1 + 8n) = -122$

21)  $-82 = -2(1 + 8n)$

22)  $92 = -4(3n - 3) + 2n$

23)  $4p - 4(p + 2) = -4(p - 2)$

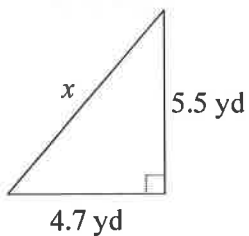
24)  $-(8 + 2p) = -7(8 - 2p)$

Part 3 - Geometry

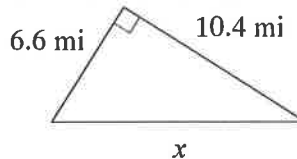
Date \_\_\_\_\_

Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

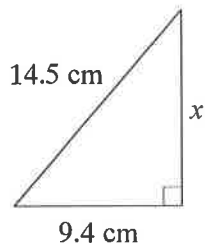
1)



2)

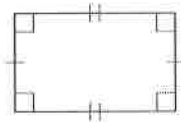


3)

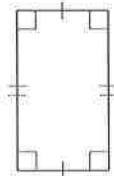


State the most specific name for each figure.

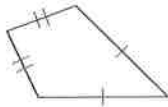
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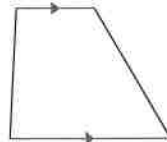
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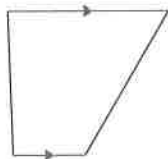
6)



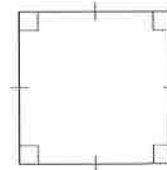
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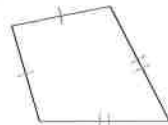
8)



9)



10)

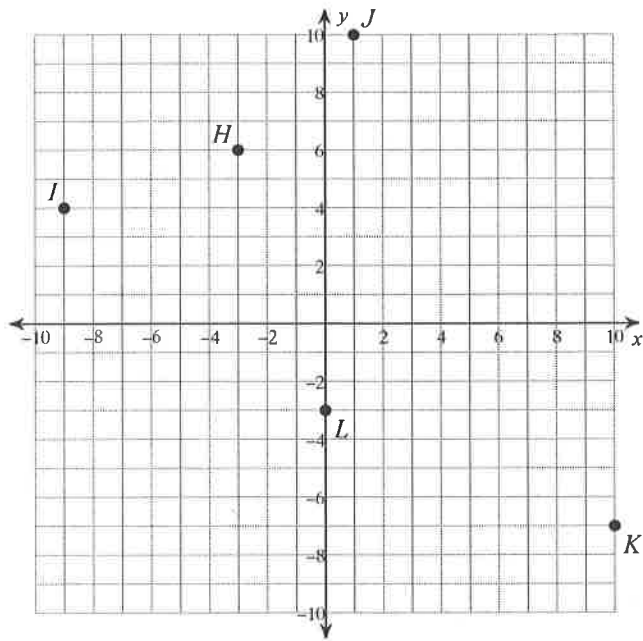


11)



State the coordinates of each point.

24)



Find the midpoint of the line segment with the given endpoints.

25)  $(-3, -2), (-5, 0)$

26)  $(4, -3), (-6, 3)$

27)  $(5, -2), (5, 8)$

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

28)  $(3.5, -5.7), (-5.4, 7.1)$

29)  $(-5.7, -7.4), (0.1, -1.9)$

30)  $(-0.3, 6.8), (4.4, 6.4)$

Part 4 - extras

Date \_\_\_\_\_

Evaluate each function.

1)  $f(a) = 3 \cdot 4^{a-1} - 1$ ; Find  $f(-2)$

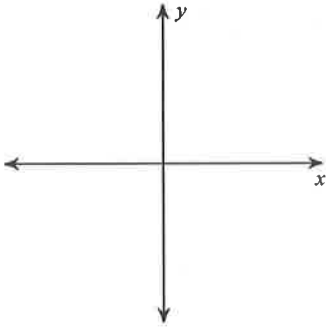
2)  $w(x) = -2|x| - 2$ ; Find  $w(7)$

3)  $h(n) = |n| - 2$ ; Find  $h(-4)$

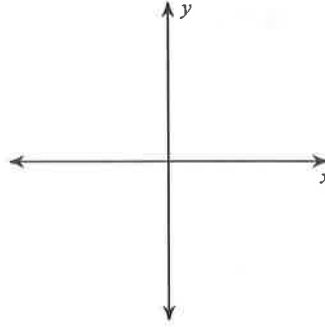
4)  $f(x) = |x| - 2$ ; Find  $f(-8)$

Draw an angle with the given measure in standard position.

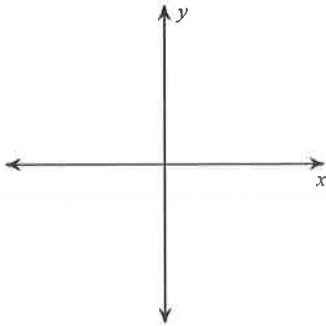
5)  $280^\circ$



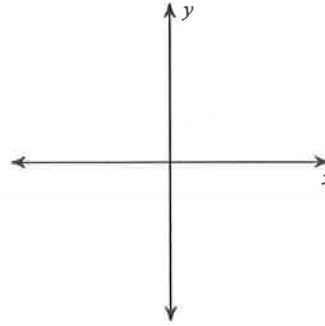
6)  $130^\circ$



7)  $-5^\circ$

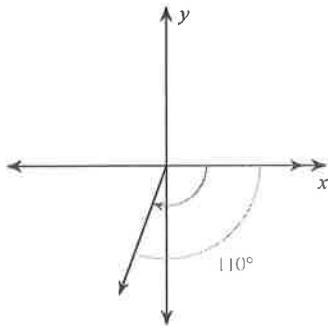


8)  $-120^\circ$



State whether the following angles are acute, obtuse, or reflex.

9)



10)

