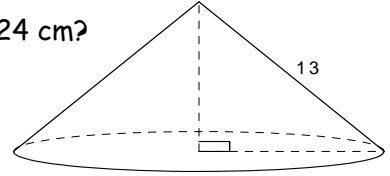


Math 1201 Review For Final

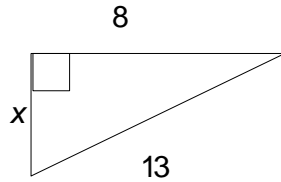
Unit One:

1. Convert 99 inches to feet and inches.

2. What is the height of this right circular cone if the **diameter** is 24 cm?

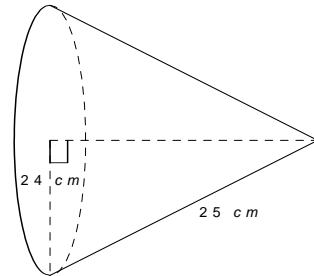


3. Solve for x:



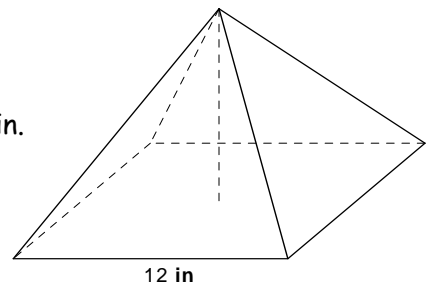
4. My drivers license says that I am 164 cm tall. How tall would this be in inches?

5. Find the **lateral** surface area of the cone to the right.

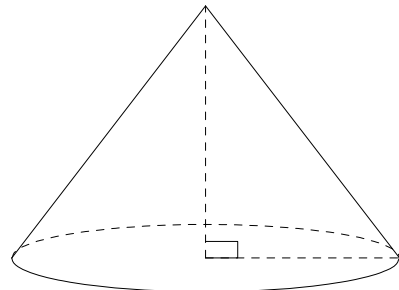


6. The surface area of a sphere is 314.28 mm^2 . What is the length of the radius to the nearest tenth?

7. Calculate the volume of this SQUARE pyramid if the height is 6 in.



8. What is the surface area and the volume of the right circular cone below? The radius is 7 cm and the slant height is 10cm. Show all of your work in order to justify your solutions and include units in your final answer.



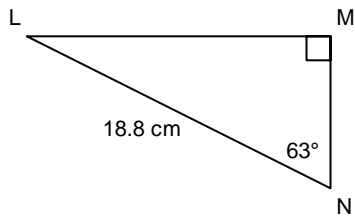
9. If 42 bricks of length 5.5 inches each are used to enclose the perimeter of a garden, what is the perimeter of the garden to the nearest tenth of a yard?

10. Joyce is driving a car in the United States and sees that the speed limit is 45 miles per hour. What should Joyce's speed limit be in kilometres per hour?

11. Squash balls have a radius of 20 mm.
What is the volume of the smallest cubical box that will hold the ball?

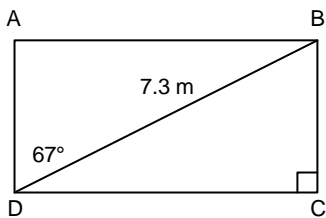
Unit Two:

1. Determine the length of MN to the nearest tenth of a centimetre.

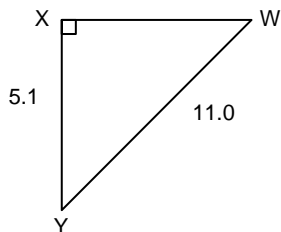


2. At a point 25 ft. from the base of a totem pole, the angle of elevation of the top of the pole is 50.1°. How tall is the totem pole to the nearest foot?

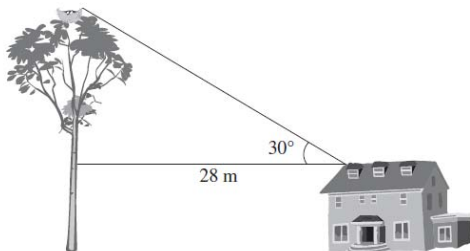
3. Calculate the length (the longer side) of this rectangle to the nearest tenth of a metre.



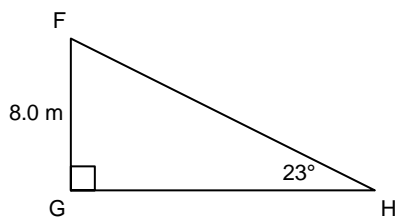
4. Determine the measure of $\angle Y$ to the nearest tenth of a degree.



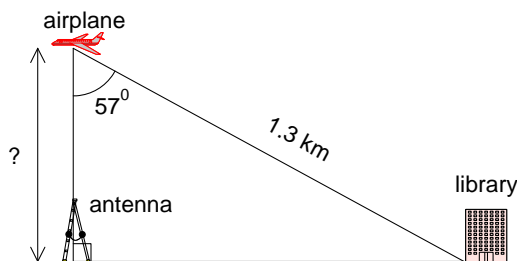
5. A 10m tall farmhouse is located 28.0m away from a tree with an eagle's nest. The angle of elevation from the roof of the farmhouse to the eagle's nest is 30° . What is the height of the eagle's nest, to the nearest metre?



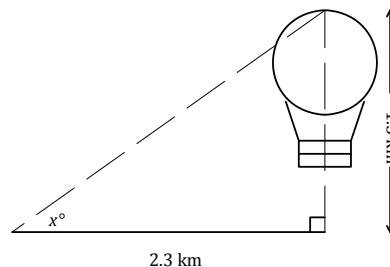
6. Solve this right triangle. Give the measures to the nearest tenth.



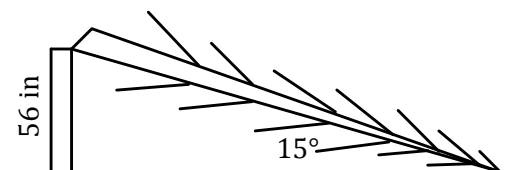
7. From an airplane, the angle between a radio antenna straight below and the base of the library downtown is 57° , as shown below. If the distance between the airplane and the library is 1.3 kilometres, using trigonometric ratios what is approximate height of the airplane above the ground?



8. What is the measure of the angle of inclination between the ground and the top of a hot air balloon?



9. A tree cracked and fell over during a winter storm. If the fallen tree formed a 15° angle of inclination and the crack was 56 inches above the ground, what was the original height of the tree?



Unit Three:

1. What is the GCF of the following numbers, 84 and 112?
2. What is the LCM of the following numbers, 54 and 72?
3. Which of the following is a perfect cube?

a) $\sqrt[3]{225}$

c) $\sqrt[3]{1728}$

b) $\sqrt[3]{1296}$

d) $\sqrt[3]{2000}$

4. Evaluate: $32^{\frac{-4}{5}}$

5. Express $4\sqrt[3]{5}$ as an entire radical.

6. Simplify: $(3x^{-1})^2(2x^2)^3$

7. Simplify the following:

a) $\sqrt{343}$

b) $\sqrt[3]{500}$

c) $\sqrt[3]{135}$

d) $\sqrt{891}$

8. Evaluate without a calculator; remember no marks will be given for an answer only.

a) $32^{0.4}$

b) $\left(\frac{9}{16}\right)^{\frac{-3}{2}}$

c) $(-32)^{\frac{-3}{5}}$

9. Simplify, without negative exponents. Clearly show the exponent laws that you used.

a) $\left(\frac{x^{-1}y^{\frac{3}{4}}}{x^{-3}y^{-2}}\right)^4$

b) $\left(-3x^{\frac{1}{2}}y^{-1}\right)^2 (y^6)^{\frac{2}{3}}$

c) $\frac{(2a^{-1}b^4c^{-3})^{-2}}{(3a^2bc^{-4})^2}$

10. A cube has a volume of 2197 m^3 . Its surface area is to be painted. Each can of paint covers about 40 m^2 . How many cans of paint are needed?

11. Evaluate: $\left(-\frac{1}{8}\right)^{-3}$?

12. Evaluate: $\left(\frac{2}{3}\right)^4 \left(\frac{2}{3}\right)^{-2}$?

13. Simplify: $(2x^2)^3(3x^{-3})^0$

Unit Four:

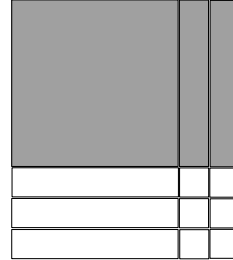
1. A polynomial is represented by the tiles shown below. What are the factors of the polynomial?
(Consider the shaded tiles positive!!)

(A) $(x + 3)(x - 2)$

(B) $(x + 3)(x + 2)$

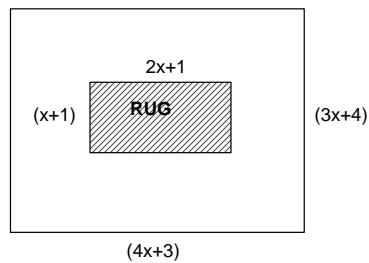
(C) $(x - 3)(x - 2)$

(D) $(x - 3)(x + 2)$



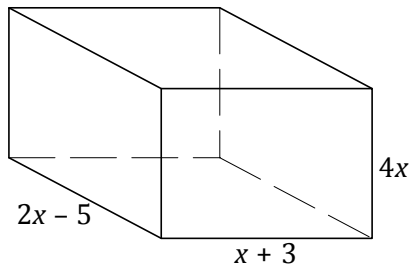
2. Multiply: $(2x - 3)(3x + 4)$.
3. A rectangle has dimensions $(2x - 3)$ and $(3x + 1)$. Find the area of the rectangle.
4. Factor completely: $4x^2 - 25$
5. Factor completely: $2x^2 + 4x - 6$
6. What is the GCF of $3x^2y^3 + 12x^3y^2 - 21xy^4$?
7. Expand and simplify: $(3x^2 - 2x - 4)(x + 5)$
8. Factor: $3x^2 + 14x - 5$
9. Factor: $49a^2 - 81b^2$
10. Expand and simplify using the method of your choice.
(A) $(2x - 1)(x + 3) - (3x + 2)(2x + 5)$
(B) $(x^2 - 2x + 5)(2x^2 + 4x - 1)$

11. The shaded region represents a picture frame. Find an expression for the area of the shaded region in simplest form.



12.

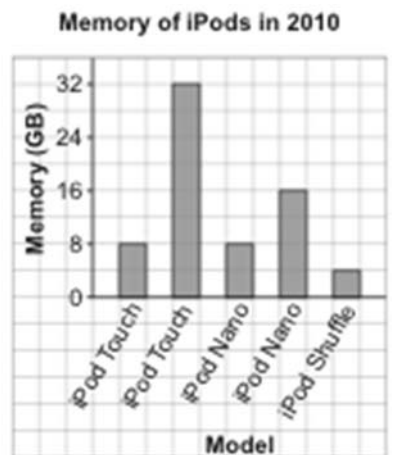
Shane determines the expression for the volume of this right rectangular prism to be $4x^3 + 4x^2 - 60x$. Algebraically determine if Shane is correct.



Unit Five:

1. Consider the relation represented by this graph:

- a. Describe the relation in words.
 b. Represent the relation in **two different** ways.



2. This table shows Alberta's speeding fines for different speeds in a 60 km/h zone.

Speed, s (km/h)	Fine, f (\$)
75	89
80	124
85	150
90	177
100	264
110	351

a. Identify the following variables:

Independent Variable: _____

Dependent Variable: _____

b. Is this relation a function? Explain.

3. For the function $g(x) = -x + 9$, find

a. $g(5)$

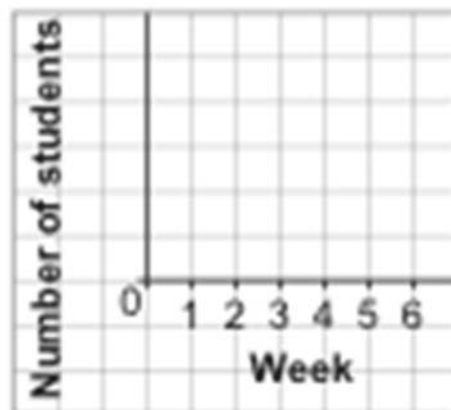
b. $g(x) = 12$

4. This table shows the attendance for a weekly after-school yoga class.

a. Graph the data.

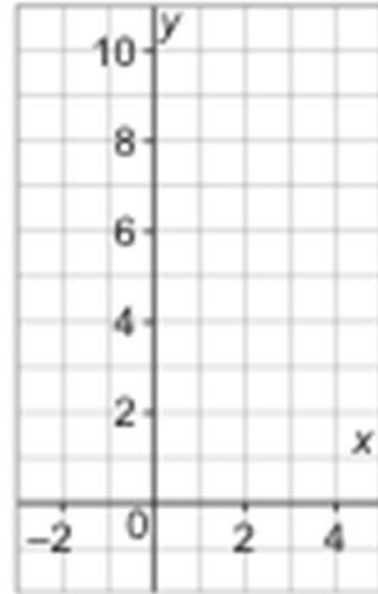
Week	Number of students
1	20
2	25
3	25
4	20
5	15
6	10

Attendance at the After-School Yoga Class



b. Does it make sense to join the points? Explain.

5. a. Make a table of values for $y = 2x^2 + 2$ and graph the data on the grid provided.



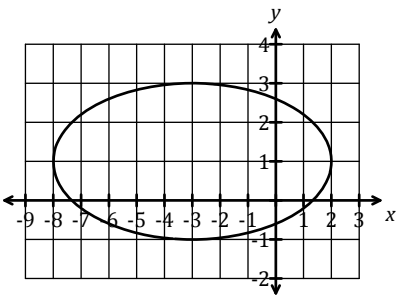
b. Does $y = 2x^2 + 2$ represent a linear function? Explain.

6. The number of hours a person works affects the amount of money earned. What is the dependent variable?

7. Which set of ordered pairs represents a function?

- A. $(-1, 2), (0, 2), (-1, 3), (2, 4)$
- B. $(-1, 3), (2, 3), (3, 4), (3, 5)$
- C. $(0, 0), (1, 1), (1, 2), (2, 3)$
- D. $(0, 0), (1, 2), (2, 3), (3, 4)$

8. What is the range of the graph below?



9. If $g(x) = 3x - 2$, what is the value of x when $g(x) = -14$?

10.

A boat travelling at 8 m/s begins to accelerate.
Its new speed, S , in metres per second, is modelled by the function
 $S(t) = 8 + 1.5t$, where t is the length of time, in seconds, that it accelerates.

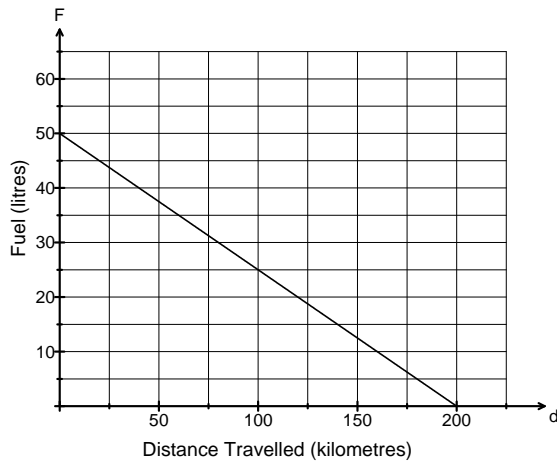
- a) Determine the speed of the boat at 7 seconds.

- b) Determine the time it takes for the boat to reach 26 m/s.

- c) What is the domain of this function?

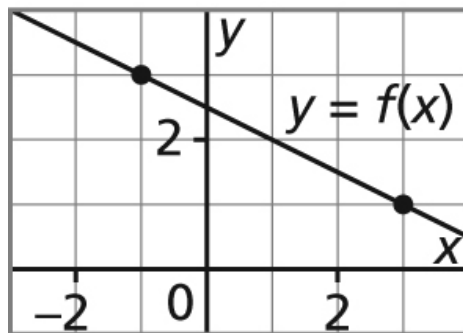
Unit Six:

1. What is the equation of the line for this graph?



2. What is the slope of the line $3y - 2x - 9 = 0$

3. What is the slope of this line?

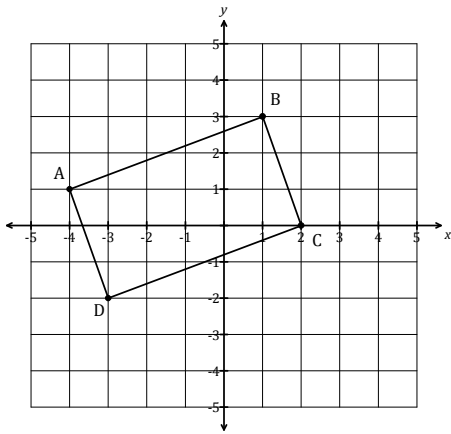


4. Which point is on the line $y + 5 = 3(x - 2)$?

- A. $(-2, -5)$
- B. $(-2, 5)$
- C. $(2, -5)$
- D. $(2, 5)$

5. What is the value of k such that the line passing through $(4, -5)$ and $(2, k)$ is parallel to the line $y = -4x + 3$?

6. Is quadrilateral ABCD a parallelogram? Justify your answer.



7. Determine the equation of the line passing through $(8, -1)$ and $(4, 1)$ in general form.

8. What is the x-intercept of $3x + 6y - 12 = 0$?

9. What is the equation in slope-intercept form? $2x - 3y - 9 = 0$

10. What is the slope of line: $y + 1 = -3(x - 2)$?

11. Write an equation for the line that passes through $E(4, -3)$ and is parallel to the line

$y + 1 = \frac{5}{7}(x - 4)$. Write the equation in general form.

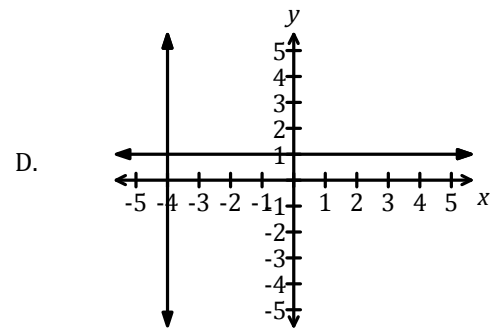
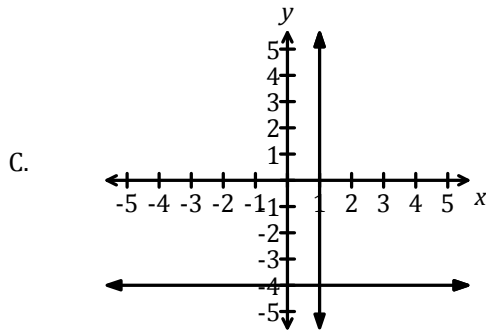
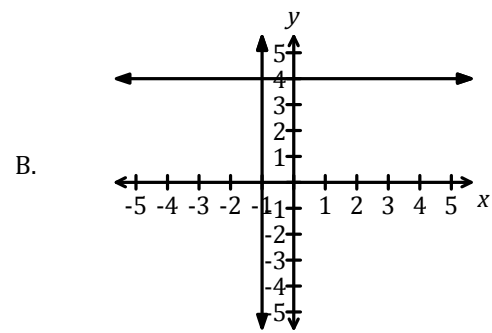
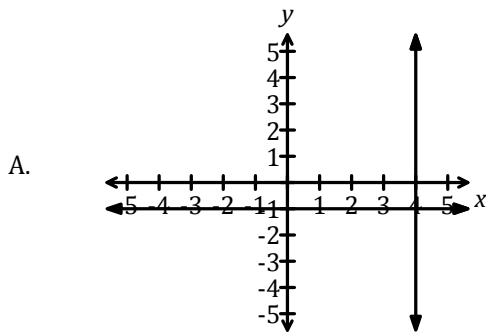
Unit Seven:

1. Solve each linear system. Use the method of your choice.

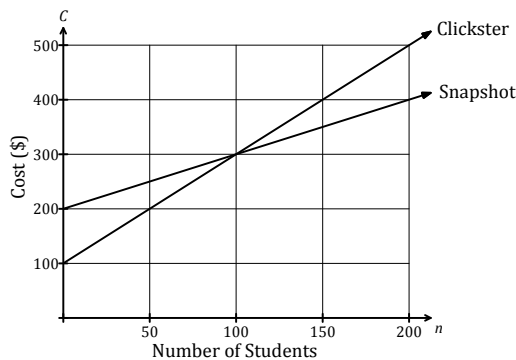
a) $-3x - 6y = 9$ b) $3x - 4y = 13$ c) $\frac{1}{2}x - \frac{1}{3}y = \frac{5}{12}$
 $2x + 2y = -4$ $5x + 3y = 12$ $\frac{5}{6}x + \frac{1}{2}y = \frac{1}{6}$

2. Which graph represents the solution to the system below?

$$\begin{cases} x = -4 \\ y = 1 \end{cases}$$



4. The principal compares the cost of two photographers for student IDs. Which statement is true?



- A. *Clickster* is the better value for less than 100 students.
- B. *Clickster* is the better value for more than 150 students.
- C. *Snapshot* is the better value for less than 100 students.
- D. *Snapshot* is the better value for more than 50 students.

5. Linda pays \$165.50 for three concert tickets and one shirt.
Glenn pays \$275.00 for four concert tickets and two shirts.
Which linear system correctly models this situation?

A.
$$\begin{cases} 3t + 4s = 165.50 \\ s + 2s = 275.00 \end{cases}$$

B.
$$\begin{cases} 3t + 4s = 275.00 \\ s + 2s = 165.50 \end{cases}$$

C.
$$\begin{cases} 3t + s = 165.50 \\ 4t + 2s = 275.00 \end{cases}$$

D.
$$\begin{cases} 3t + s = 275.00 \\ 4t + s = 165.50 \end{cases}$$

6. Which system has an infinite number of solutions?

A.
$$\begin{cases} x + y = 3 \\ 2x + 3y = 4 \end{cases}$$

B.
$$\begin{cases} x + y = 3 \\ 2x + 2y = 6 \end{cases}$$

C.
$$\begin{cases} x + y = 3 \\ 2x + 2y = 8 \end{cases}$$

D.
$$\begin{cases} x + y = 3 \\ 2x + y = 3 \end{cases}$$

7. Algebraically solve the linear system.

$$\begin{cases} 3x + \frac{1}{2}y = 12 \\ -2x + y = 8 \end{cases}$$