

MFM2PEXAM REVIEW

UNIT 3 - Measurement, Volume and Surface Area.

1) Use your formula sheet to convert the following

A) 6 feet = _____ inches

B) 5 yards = _____ inches

C) 12 miles = _____ kilometers

D) 34 inches = _____ cm

E) 25°C = _____ $^{\circ}\text{F}$

F) 4 gallons = _____ pints

G) 38 litres = _____ gallons

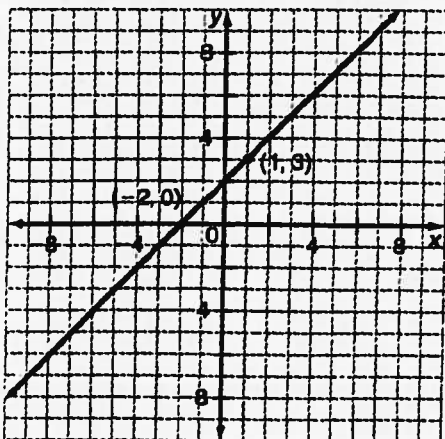
H) 5000 mm = _____ meters

2) A candle in the shape of a square-based pyramid has a height of 10cm and the length of each side of the base is 8cm. How much wax is needed to create the candle?

3) A spherical gas storage tank has a radius of 12m. The paint needed to cover the exterior of the gas tank costs \$35 per can. Each can of paint covers 40m^2 . Find the cost to paint the tank with two coats of paint.

UNIT 4 - LINEAR RELATIONS

1) Write the equation of the graph below. First determine the slope and y- intercept



slope: _____

y-intercept: _____

equation: _____

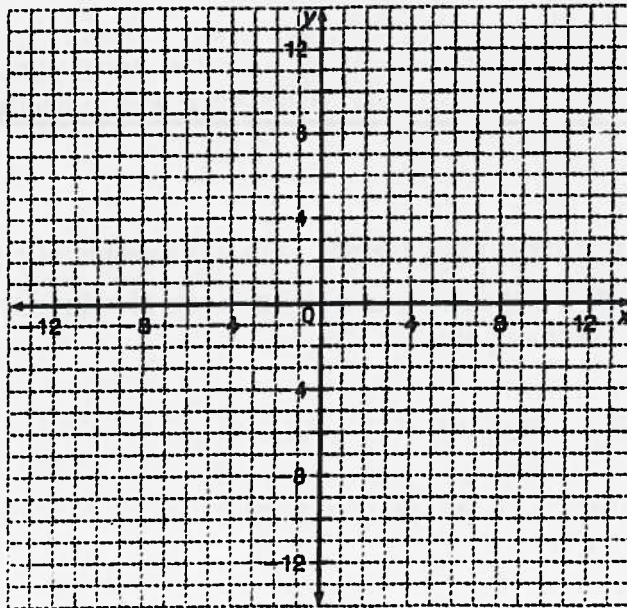
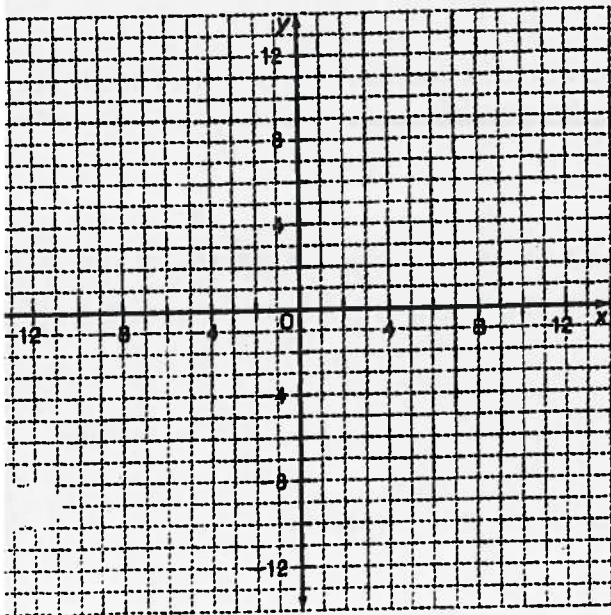
2) Write the equation of each line that has a slope of -2 and passes through the point (4,1).

3) Write the equation of each line that passes through the points (4,3) and (2,9).

4) , Graph the following lines on the graphs provided.

A) $y = -2x + 3$

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



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EXAM REVIEW

Each of the following questions were on your chapter tests and they are very similar to the questions that will be on your exam.

UNIT ONE TEST- SIMILAR TRIANGLES

1) Solve each of the following proportions for the unknown variable(letter).

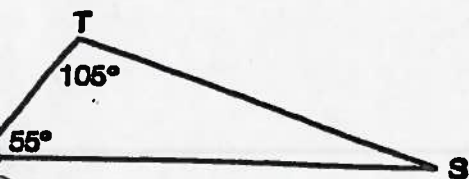
A)

$$\frac{x}{5} = \frac{12}{15}$$

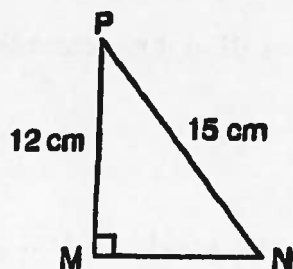
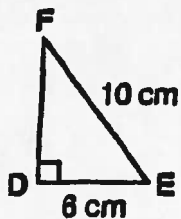
B)

$$\frac{4}{16} = \frac{x}{20} = \frac{6}{y}$$

2) Triangles $\triangle RTS \approx \triangle VXW$, find the unknown measure of the angles of the triangles.



3) Triangles $\triangle DEF \approx \triangle MNP$, find the length of side MN .



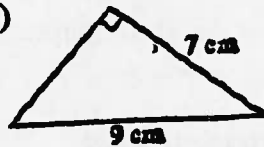
UNIT 2 -**TRIGONOMETRY****Part A - Knowledge**

1) Calculate the length of the missing side for each triangle.

A)

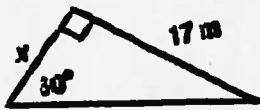


B)

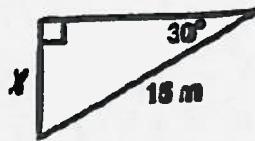


2) Use one of the three basic trigonometric ratios to solve the following triangles for x .

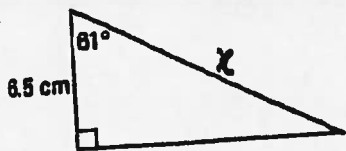
A)



B)



C)



D)

**Part B - Applications - Solve the following questions.**

1) A 4m ladder leans against a building wall. The foot of the ladder makes an angle of 63° with the ground. How far up the wall does the ladder reach?

2) In triangle $\triangle DEF$, $\angle E = 90^\circ$, $DF = 11.5\text{cm}$, and $DE = 2.7\text{cm}$. Find the measure of $\angle D$, to the nearest tenth of a degree.

3) Find the length of the diagonal of a rectangle that has a length of 14m and a width of 8m.

4) You are standing on the top of a tall building. The base of a second building is 50 m away and forms an angle of depression of 77° , and the top of the second building is at an angle of elevation of 25° .

A) Sketch and label a diagram of the situation

B) What is the height of the second building, to the nearest tenth of a meter.

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EXAM REVIEW

UNIT 5 - SOLVING EQUATIONS.

① Solve the following equations. (show all your steps).

A) $3x - 5 = 28$

B) $\frac{x}{4} + 2 = 26$

C) $2(-3x + 4) = 20$

D) $\frac{x+2}{3} = 5$

E) $3(x+1) = 2(x-3)$

F) $\frac{x+6}{3} = \frac{x-2}{5}$

② Rearrange the equation, $I = Prt$, to solve for t .

③ Rearrange the equation, $P = 2l + 2w$, to solve for w .

④ Rearrange the formula $y = mx + b$ to solve for m .

⑤ Rearrange the following equations into $y = mx + b$ form.

A) $2x + y - 3 = 0$

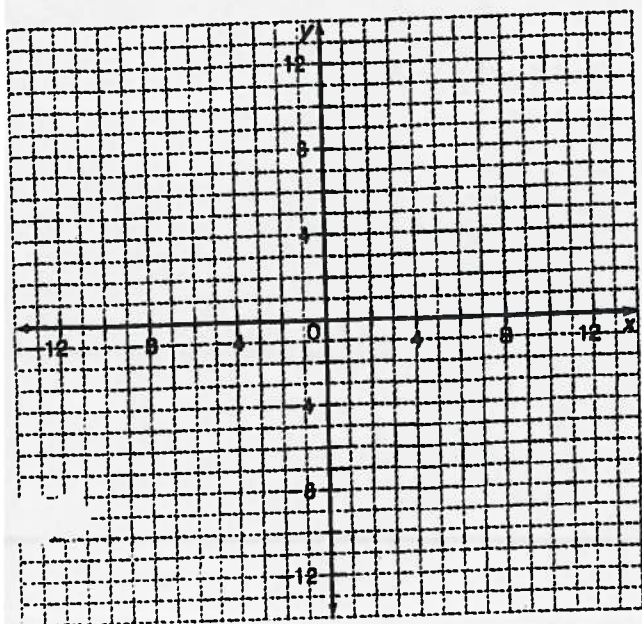
B) $2x + 3y - 12 = 0$

C) $3x - y - 5 = 0$

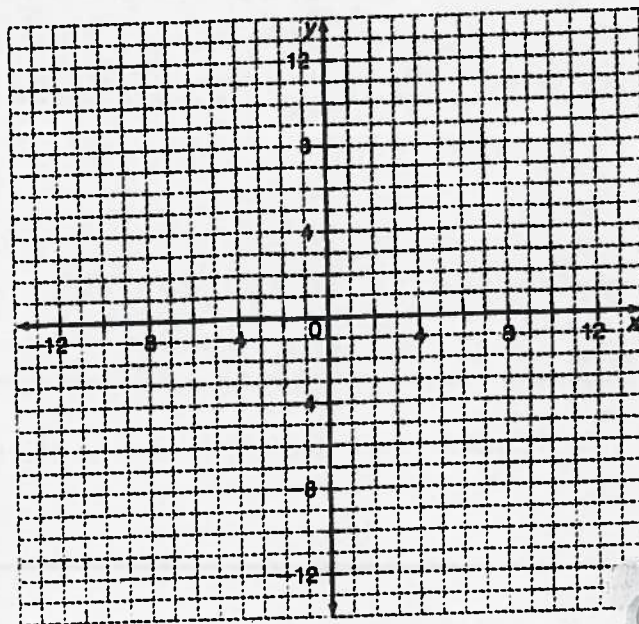
UNIT 6 - LINEAR SYSTEMS.

1) Solve by graphing. \

$$\begin{aligned} \text{A) } & y = x + 4 \\ & y = -x - 2 \end{aligned}$$



$$\begin{aligned} \text{B) } & -6x + 2y = -8 \\ & 2y = x + 2 \end{aligned}$$



2) Solve each system of equations using substitution

$$\begin{aligned} \text{A) } & 2x - y = 3 \\ & x = y + 4 \end{aligned}$$

$$\begin{aligned} \text{B) } & 2x + 3y = -1 \\ & x + y = 1 \end{aligned}$$

3) Solve each system using elimination. \

$$\begin{aligned} \text{A) } & 2x - y = -13 \\ & x - y = -10 \end{aligned}$$

$$\begin{aligned} \text{B) } & 3x + 2y = 18 \\ & x - 3y = -5 \end{aligned}$$

4. A teacher plans to buy books for her class. She has 28 students and wants to buy a book for each one of them. The books cost \$ 5 each for the softcovers and \$ 8 for the hardcovers. The teacher has \$173 to spend. How many of each type of book can she buy?

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UNIT 7 - POLYNOMIALS

1) Expand and simplify

A) $(x+4)(x+2)$

B) $(x-3)(2x+6)$

C) $(x-7)^2$

2) Factor each completely

A) $3x-12$

B) $4x^2+8x-12$

C) $18x^3-12x^2$

3) Factor each difference of squares

A) (x^2-25)

B) $(4x^2-9)$

4) Factor each trinomial

A) x^2+7x+6

B) $x^2-9x+14$

C) $x^2+4x-12$

5) The rectangle below has an area represented by the trinomial $x^2-7x-18$. Factor the trinomial to determine expressions for the length and width of the rectangle.

$$\text{Area} = x^2 - 7x - 18$$

B) Determine the actual length and width of the rectangle if $x = 15m$.

UNIT 8 - QUADRATICS

1) Complete the following chart.

Standard Form	Factored Form	X- intercept	X- intercept	Y- intercept
$y = x^2 - 7x + 12$				
$y = x^2 + 8x - 20$				
	$y = (x - 3)(x + 5)$			

2 Vertex _____, _____

Axis of Symmetry _____

X-intercept _____

X-intercept _____

Y- intercept _____

Min/Max _____

