Name: _____

Pre-Calculus 11 June 2019 – PRACTICE FINAL

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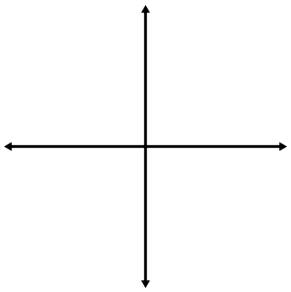
Show all of your work.

1a) Sketch 120° in standard position (0.5 marks). b) State the reference angle (0.5 marks).
c) Determine the exact value of $\cos 120°$ (2 marks)

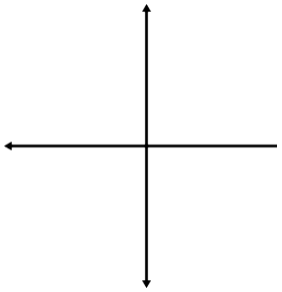


ANSWERS:

b) REF ANGLE: _____

c)

2) Solve for θ (2 marks): $\sin\theta = \frac{\sqrt{3}}{2}, 0° \leq \theta \leq 360°$



ANSWER(S):

3) Sketch and solve the triangle to the nearest tenth (3 marks):

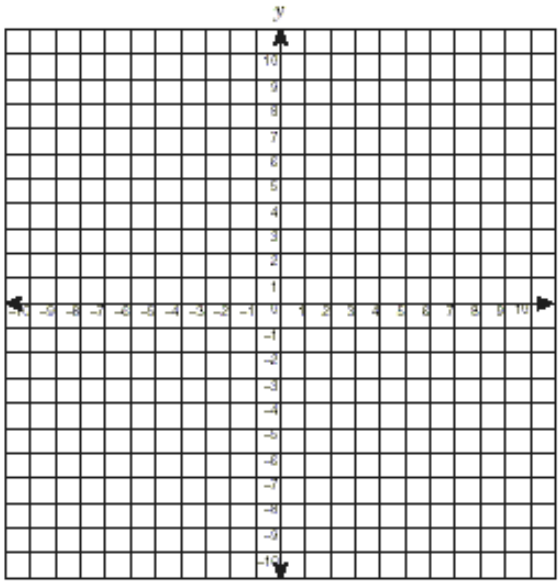
a = 12m, b = 7m, c = 14m

<A= _____

<B = _____

<C = _____

4a) Graph $y = 2x^2 + 16x + 33$ (2 marks) by first completing the square (2 marks), and state the b) axis of symmetry equation (0.5 marks), and c) the range (0.5 marks).



ANSWERS:

b) _____

c) _____

5) The school play charges $10 for admission, and on average, 80 people attend the show. For each $1 increase, attendance drops by 5 people. What ticket price will maximize the school's revenue and what will that maximum revenue be? (3 marks)

SENTENCE ANSWER:

6) Solve by factoring (2 marks): $-10x = -3x^2 + 8$

ANSWER(S):

7) Solve using the quadratic formula and leave answer in exact values (2 marks):

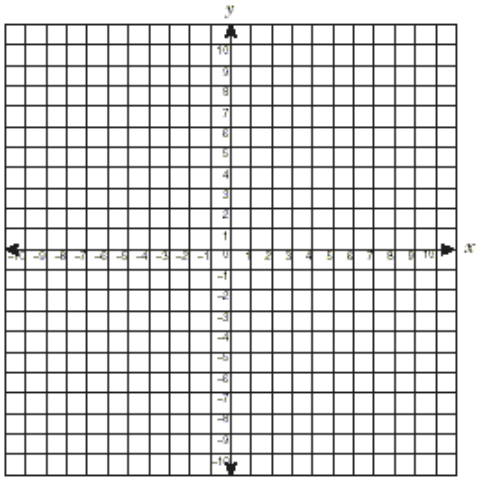
$$6 - 2x^2 = 3x$$

ANSWER(S):

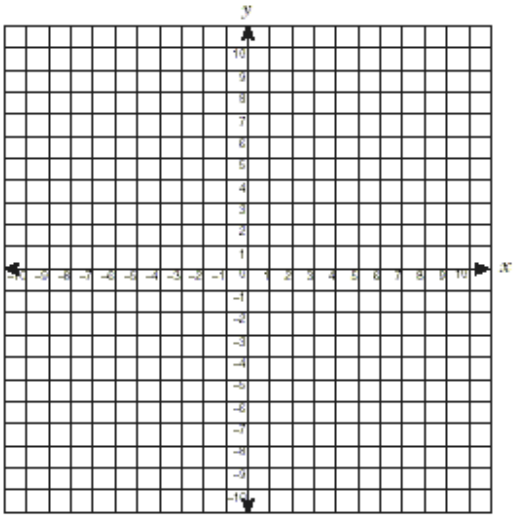
8) Solve by Substitution **OR** Elimination (3 marks): $x^2 - y = 10$ and $2x - 3y = -10$

ANSWER(S):

9) Solve the quadratic inequality by graphing (2 marks): $y > -2(x-1)^2 - 3$



10) Solve the system of inequalities by graphing: (3 marks) $y > x^2 - 4$ and $y \leq -x + 1$



11) Simplify the expression (1.5 marks). State any restrictions on the variable (0.5 marks).

$$3x\sqrt[4]{16x} - 5\sqrt[4]{x^5} + \frac{x\sqrt[4]{81x}}{3}$$

ANSWER:

Restriction:

12) Simplify by rationalizing the denominator (2 marks). State any restrictions on the variable

$$\frac{\sqrt{2}+\sqrt{3}}{\sqrt{2}-\sqrt{3}}$$

ANSWER:

Restriction:

13) Solve. State any restrictions and check for extraneous roots (3 marks).

$$\sqrt{4-3x}=x+8$$

CHECK:	CHECK:

ANSWER(S): _____

Restriction: _____

TURN OVER!

14) Solve (3 marks). $\frac{x+4}{x} + \frac{16}{x^2-4x} = \frac{-3}{x-4}$

ANSWER(S):

Non-permissible(s):