

Math 1201 Review For Midterm Exam

Unit One:

1. What **referent** (for the Imperial System) would be the most appropriate to use to estimate the measure of:

- a. a cellphone _____
- b. the width of the gym _____
- c. the height of your locker _____

2. Convert:

- a. 6 ft. = _____ in.
- b. 39 ft. = _____ yd.
- c. 48in.= _____ ft.
- d. 1mi. = _____ ft.

3. Convert:

- a. 92 ft. to yards and feet.

92 ft. = _____ yd. _____ ft.

- b. 6 yd. 2 ft. to inches.

6yd. 2 ft. = _____ in.

- c. 5635 ft. to miles, yards, and feet.

5634ft. = _____ mi. _____ yd. _____ ft

- 4. 3 km to miles and yards

3 km = _____ mi. _____ yd.

- 5. 2 ft. to the nearest centimetre

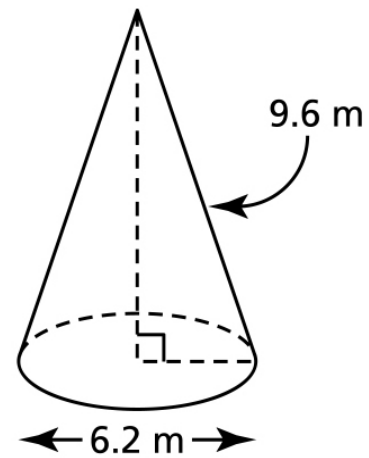
2 ft. = _____ cm

- 6. 1020 in. to the nearest tenth of a metre

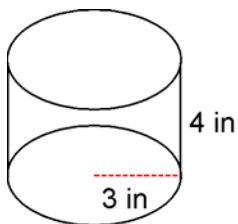
1020 in. = _____ m

- 7. Ben is 53 in. tall and Shelley is 125cm tall. Who is taller? How do you know?

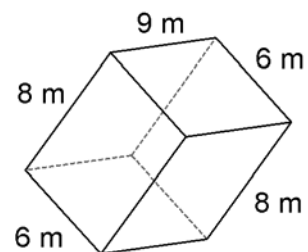
8. Determine the surface area and volume .
Give your answers to the nearest tenth .



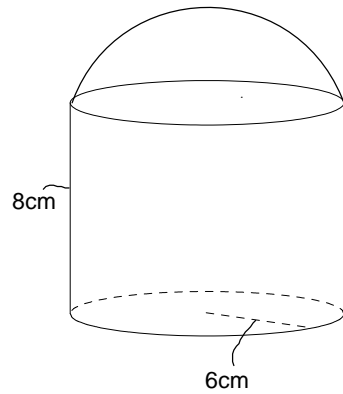
9. A regular tetrahedron has a surface area of approximately 294 cm^2 . Find the lateral area of the tetrahedron to the nearest square centimetre.
10. A pyramid has a surface area of 258 cm^2 . A cone, with a base radius of 4cm, has the same surface area as the pyramid.
- Find the slant height of the cone to the nearest tenth of a centimetre.
 - Find the height of the cone to the nearest tenth of a centimetre.
11. Find the surface area and volume of the cylinder .



12. Find the surface area and volume of the prism.

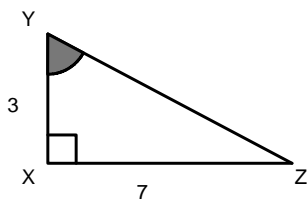


13. What is the surface area and volume of this figure?



Unit Two:

1: Find the tangent ratio for the indicated angle.



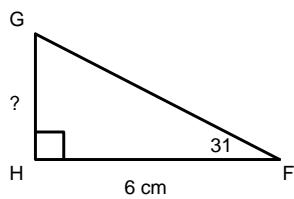
2: Find the measure of $\angle A$ for each value of $\tan A$. Give your answer to the nearest degree.

A) $\tan A = 0.5$

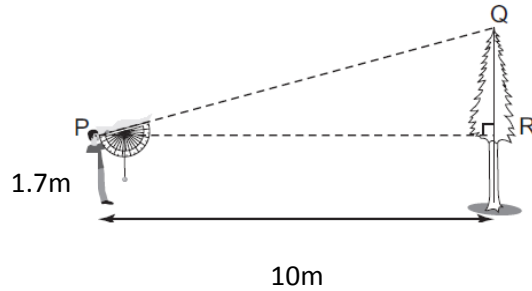
B) $\tan A = \frac{5}{6}$

3: A telephone pole is 18m high and is supported by a wire 8m from the base. What angle, to the nearest degree, does the wire make with the ground?

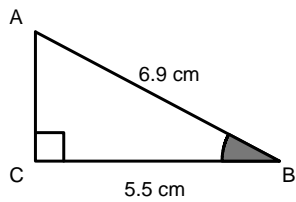
4: Find the length of the indicated side.



- 5: Use the information in the diagram to find the height of tree to the nearest tenth of a metre.



- 6: Find the measure of the indicated angle to the nearest degree.

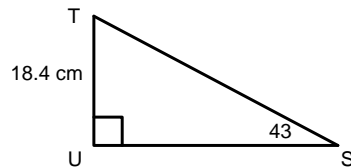
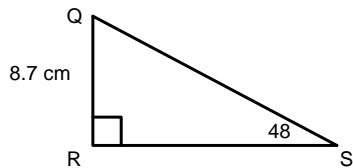


- 7: A firefighter rests a 15.6m ladder against a building. What angle does the ladder make with the ground, if the ladder is 8.5m away from the base of the building?

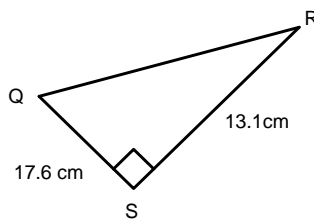
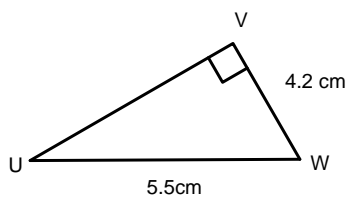
- 8: A loading ramp is 4.5m long. The top of the ramp has height 1.6m. What angle does the ramp make with the ground? Give your answer to the nearest degree.

- 9: A 15m support cable joins the top of a telephone pole to a point on the ground. The cable makes an angle of 32° with the ground. Find the height of the pole to the nearest tenth of a meter.

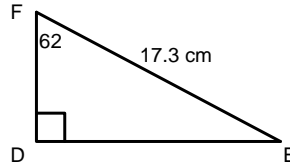
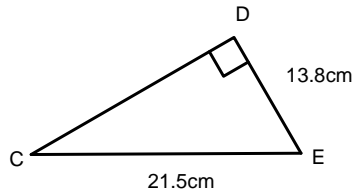
- 10: Find all unknown side lengths to the nearest tenth of a centimetre.



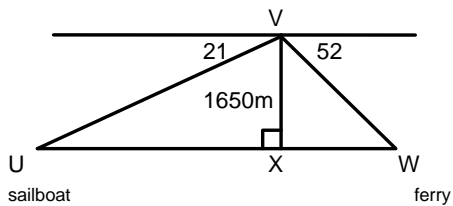
- 11: Find all unknown angle measures to the nearest degree.



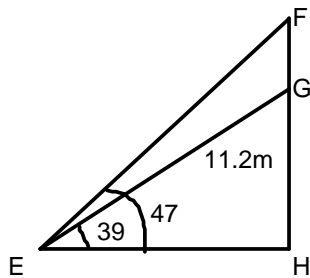
12: **Solve** the following triangles. Give angle measures to the nearest degree. Give side lengths to the nearest tenth of a centimetre.



13: From a small plane, V, the angle of depression of a sailboat is 21° . The angle of depression of a ferry on the other side of the plane is 52° . The plane is flying at an altitude of 1650m. How far apart are the boats, to the nearest metre?



14: Two guy wires support a flagpole, FH. The first wire is 11.2m long and has an angle of inclination of 39° . The second wire has an angle of inclination of 47° . How tall is the flagpole to the nearest tenth of a metre?



Unit Three: (3.1, 3.2, 4.1-4.5)

1: Write the prime factorization of 144 and 600

2: Find the GCF of each pair of numbers:

- A) 44 and 70
- B) 36 and 48

3: Find the LCM of each pair of numbers:

- A) 12 and 30

B) 16 and 18

4: Hamburger patties come in packages of 8. Buns come in packages of 6. What is the least number of hamburgers that can be made with no patties or buns left over?

5: Use prime factorization to find each square root

A) $\sqrt{225}$

B) $\sqrt{196}$

C) $\sqrt{1225}$

6: Use prime factorization to find each cube root.

A) $\sqrt[3]{729}$

B) $\sqrt[3]{3375}$

C) $\sqrt[3]{9261}$

7: Tell whether each number is rational or irrational.

A) $\sqrt{36}$

B) $\sqrt[3]{12}$

C) $\sqrt[3]{-8}$

D) $\sqrt{\frac{81}{4}}$

8: Find each square root. Identify any that are irrational.

A) $\sqrt{4}$

B) $\sqrt{5}$

C) $\sqrt{9}$

D) $\sqrt{100}$

9: Find each cube root. Identify any that are irrational.

A) $\sqrt[3]{-216}$

B) $\sqrt[3]{64}$

C) $\sqrt[3]{1}$

D) $\sqrt[3]{100}$

10: Simplify each radical.

A) $\sqrt{320}$

E) $\sqrt[3]{40}$

B) $\sqrt{735}$

F) $\sqrt[3]{162}$

C) $\sqrt{24}$

G) $\sqrt[3]{189}$

D) $\sqrt{108}$

H) $\sqrt[3]{576}$

11. Write each mixed radical as an entire radical.

A) $3\sqrt{11}$ C) $3^3\sqrt{4}$
B) $2\sqrt{13}$ D) $2^3\sqrt{15}$

12. Evaluate each power without using a calculator.

a) $1000^{\frac{1}{3}}$ b) $0.25^{\frac{1}{2}}$ c) $(-8)^{\frac{1}{3}}$ d) $\left(\frac{16}{81}\right)^{\frac{1}{4}}$

13. a) Write $26^{\frac{2}{5}}$ in radical form in 2 ways.

b) Write $\sqrt{6^5}$ and $(\sqrt[4]{19})^3$ in exponent form.

14. Evaluate.

a) $0.01^{\frac{3}{2}}$ b) $(-27)^{\frac{4}{3}}$ c) $81^{\frac{3}{4}}$ d) $0.75^{1.2}$

15. Evaluate each power.

a) 7^{-2} b) $\left(\frac{10}{3}\right)^{-3}$ c) $(-1.5)^{-3}$

16. Evaluate each power without using a calculator.

a) $16^{-\frac{5}{4}}$ b) $\left(\frac{25}{36}\right)^{-\frac{1}{2}}$ c) $\left(\frac{8}{27}\right)^{\frac{2}{3}}$

Unit Four – Multiplying Polynomials and Factoring

1. Expand the following

a. $4x(x+2)$

b. $(4x-1)(x+2)$

c. $(4x^2+3x+1)(x+3)$

d. $(2x+3)^2$

e. $(x+3)^2+4x(x+9)$

r. $(2x)(x-1)-(x+2)(x+5)$

2. Factor Completely

a. $25x^3y^5-15x^2y^4+10xy^3$

b. x^2+6x+8

c. $5x^2+17x+6$

d. $3x^3+12x^2+9x$

a. $4x^2-9x+5$

b. x^2-25

c. $25x^2+14xy+4y^2$

d. $3x^2+22xy+7y^2$