GRADE 10 ESSENTIAL
FINAL EXAM
Teacher: Mr. Rick Furney

Name: _____
Date: _____

This exam is worth 25% of your course mark. It is issued in two separate parts

Calculator. Use a calculator to its full effect unless otherwise indicated!
Reference Notes. You may use a single doubled-sided sheet of reference notes.
Supporting Material. Conversion tables and formulae and templates will be provided.
Rounding. Round all decimal answers to nearest 0.01 unless otherwise indicated.
Caution: Geometric figures are not necessarily drawn to scale.
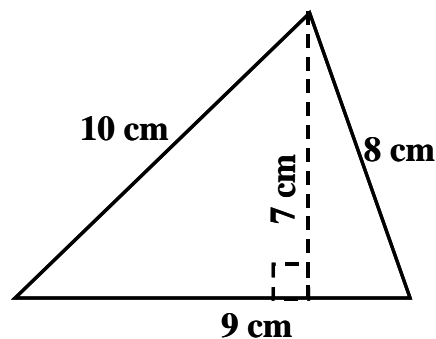
PART 1 - MULTIPLE CHOICE

Circle the letter of the best or *closest* answer.
Guess if necessary
Each question is worth two marks. Diagrams not necessarily to scale.

1. The area of the triangle is:

    a. 27 cm

    b. 34 cm^2

    c. 31.5 cm^2

    d. 63 cm^2

2. If Jason goes to work at 08:45 and leaves work at 16:15 and has an unpaid 30 minute lunch break; for what duration of time does he get paid?
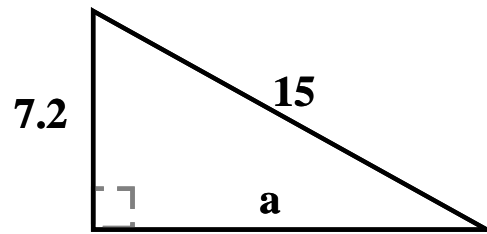
    a. 7 hours

    b. 5 hours 45 minutes

    c. 6 hours 15 minutes

    d. a full eight hour shift

3. 28 feet is the equivalent of this many metres:

    a. 85 cm   **b.** 8.53 m   **c.** 91.84 m   **d.** 336 in

5. The length of side **a** is:

    a. 16.7 units

    b. 7.8 units

    c. 173 units

    d. 13.16 units   **Diagram not to scale**

6. To convert a temperature to Celsius degrees from Fahrenheit degrees we use the formula: $°C = \frac{5}{9}(°F - 32)$

If the temperature is 50°F; the temperature in Celsius is:

    a. 10°C   b. 4 degrees below zero!
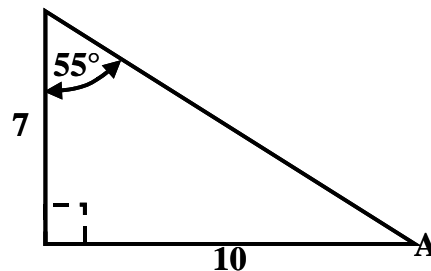   c. 2.78°C   d. boiling!

7. 1.87% of $2500 is:

    a. $4675   **b.** $46.75   **c.** non-taxable   **d.** $1336

9. Five feet converted to metres is:

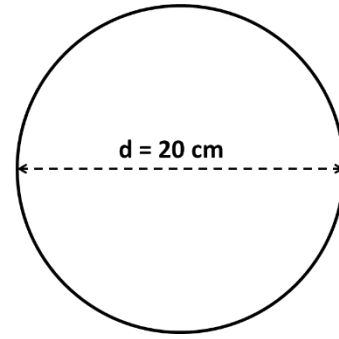   a. 16.4 m   b. 1.52 m   c. 60 in   d. 11 m

10. The area of this triangle is:

a. 55°   b. 70 square units

c. 35 units²   d. 72 units

11. The area of this circle is approximately:

a.   10 cm   b.   314 cm^2

c.   62.83 cm   d. 1257 cm^2

(d = 20 cm)

12. The sum of all the counting numbers from 1 to 22 is:

a.   253   b.   210   c.   23   d.   55

13. Your bike's wheels have a diameter of 26 inches. The circumference of your wheel is:

a.   2ft 2in   b.   13 in^2 c.   13 in   d.   82 in

14. **Convert**. If three Gronks is the same amount as one Prinkle; then eight Prinkles is how many Gronks?

a.   0.375   b.   2.6   c. $2\frac{2}{3}$ d.   24

15. The area of a circle having a radius of 6 cm is:

a.   452.39 cm^2 b.   37.70 cm

c.   6 cm^2 d.   113.10 cm^2

16. Mathilde gets paid at an hourly rate of **$13.50** per hour.   She works the following hours in one week. What is her gross pay if overtime is paid at **time-and-a-half** after **8** hours in any one day.

Day	M	T	W	Th	F
Hours	7	10	5	10	4

a.   **$513**   b.   **$486**   c.   **$1350.00**   d.   **$162.00**

17. Brian has a gross income of **$572** per week. He contributes **$45**/week to an **RRSP**. His combined income tax rate is **22%.** How much income tax is deducted from his pay cheque?

a.   **$125.84** b.   **$115.94**   c.   **$9.90**   d.   **$527.00**

18. The sum of **two** numbers is **17** their **difference** is **7**. Find the two numbers.

    a. (9.5, 4.5)   b. (9, 8)   c. (14, 3)   d. (12, 5)

19. The Canada Pension Plan (**CPP**):

    a. is not deducted if you are unionized;
    b. is a defined benefit financial plan that that is much better than any pension from the city or the government;
    c. is a contributory plan into which all workers pay a portion of their employment income so they can get a pension at age 65;
    d. allows you to retire in comfort on about $40,000 per year when you retire at age 65.

20. An example of a significant **deduction** from employment income is:

    a. PST (Provincial Sales Tax) exemptions

    b. CCB (Canada Child Benefit) benefit

    c. provincial income tax

    d. Goods and Services Tax (GST) rebate

21. If we perform a translation of a shape on a grid, we are performing a transformation best described as:

    a. a slide   b. a swivel   c. a reflection d. a dilation

22. Jocelyn comes back from Mexico with 566 Pesos. Her Canadian bank sold her the Pesos for $0.1780 Cdn / Peso. Her bank buys back Pesos for $0.1625 Cdn / Peso. Jocelyn will get this amount when she cashes in her Pesos:

    a. $91.98 Cdn   b. $101.03 Cdn   c. $34.83 Cdn

24. **BONUS**. How many **different** sums (amounts) of money can you make with **one** loonie, **one** quarter, **one** dime, and **one** nickel if you are only allowed to select **two** coins?

    a. 10   b. 6   c. 4   d. $1.40

| Name: _____ |
| Date: _____ |

PART 2
OPEN RESPONSE

Show work for best mark. Use a calculator to its full effect. Use a single double-sided sheet (8 ½" X 11") of reference notes.
Diagrams are not necessarily to scale. **Round** decimal answers to nearest hundredth unless otherwise indicated
Indicated **marks** are based on the effort and the importance of the question.

4

1. Complete the table for the indicated measurements as accurately as the ruler allows:
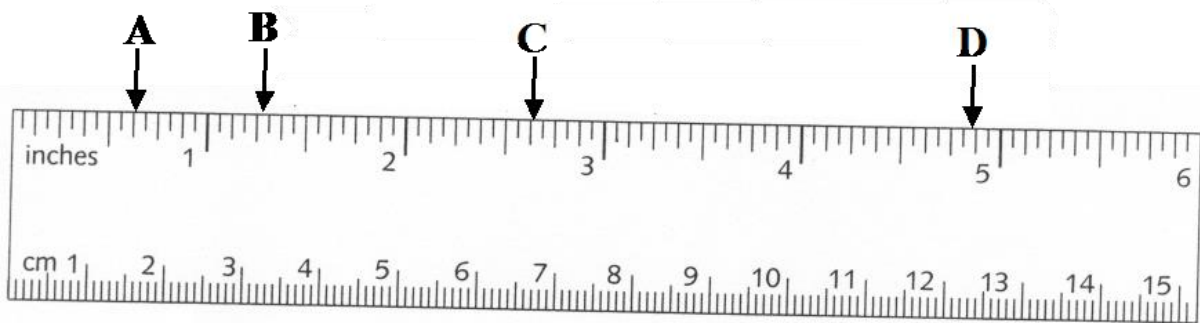
Position	A	B	C	D
inch				

2. Evan gets paid for the following hours this week. He gets an hourly wage of **$16.75**. **Overtime** pay is calculated after **eight hours in a day**. His overtime pay rate is calculated as **time and a half**. Calculate his **gross** weekly pay.

Weekday	M	T	W	Th	F	Sa	Su
Hours	4	8.5	9	10	10	6.5	0

4

3.   Calculate the length of the unknown side, **x**:

3

4.5 cm

7.5 cm

x cm
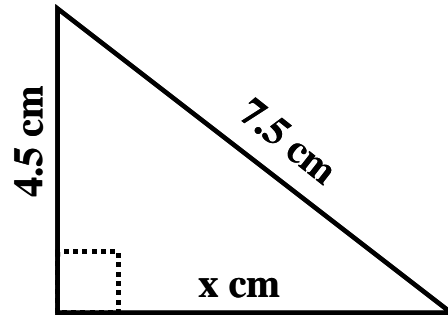
4.   Wanda is painting one wall in her bedroom. The wall is **4 m** long and **3.2 m** high. She has a window on that wall that measures 100 cm wide by 60 cm high. Calculate the area of wall that Wanda needs to paint.

4

5.   Convert the following measurments:

a. 1.64 kg = _____ g	b. 1,620 miles = _____ km
c. 21 days = _____ mins	d. 5 ft 9 in = _____ in

8

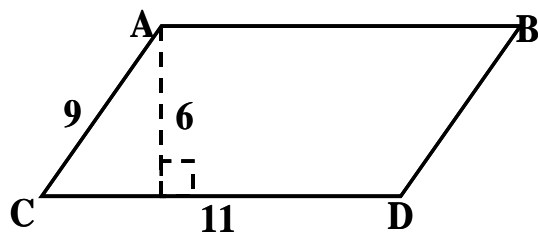| **6.** **Simplify:**	
8	
a. 13:20 + 4:45 =	b. 5ft 6 in − 2 ft 8 in =
c. 6 lb 5 oz + 3 lb 12 oz	d. $5\frac{1}{2} * \frac{1}{2} =$

7.   Calculate sine of angle A.

2   (*to the nearest ten-thousandth; 0.0001*)
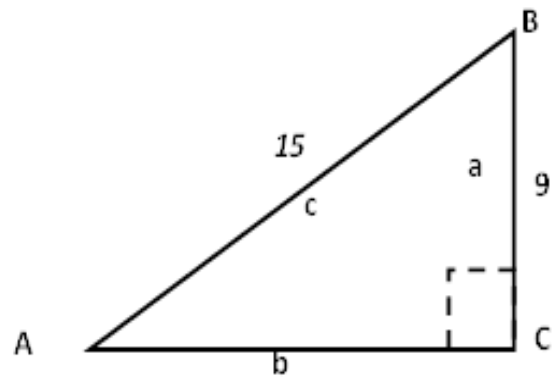
8.   Determine the **Perimeter** *and* the **Area** of the following figures:
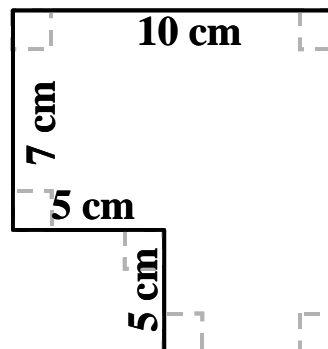
a.   Parallelogram

8

A _____ B

9 ¦ 6

C   11   D

P = _____   A = _____

b.   Irregular rectilinear figure

10 cm

7 cm

5 cm

5 cm

P = _____
A = _____

9.   Calculate the **perimeter** of this Regular Octagon having sides of 2.3 cm.

2

2.3 cm
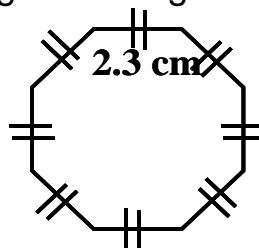
10. Determine the measure of angle A (m∠A) to the nearest whole degree.
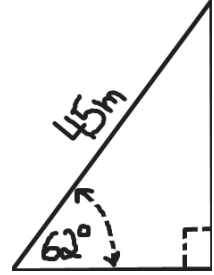
m∠A = _____°

2

A   7cm   P

3cm

Q
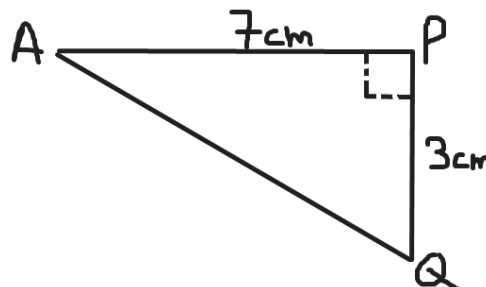
(not necessarily to scale)

11. Vanessa is out with her daughter flying
a kite. The string is **45 m** long. Her
daughter asks: "*Mommy, how high up
above the ground is the kite?*" Vanessa
takes out her phone and measures the
angle that the string makes to the ground; it
reads **62°**. Vanessa calculates that the kite
is a height of _____ above the ground.

2

45m
62°

12. The two triangles below are similar triangles. Calculate length **x**.

2

$\triangle ACB \sim \triangle QCP$

P
x m
A
18m
C
3m
Q
14m
B
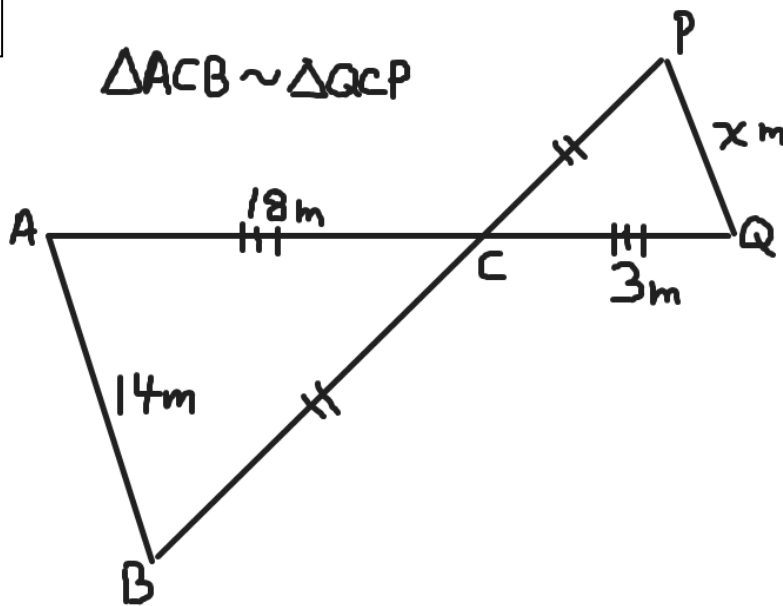
13. **Transformations**

a.   Plot and clearly *label* the points:
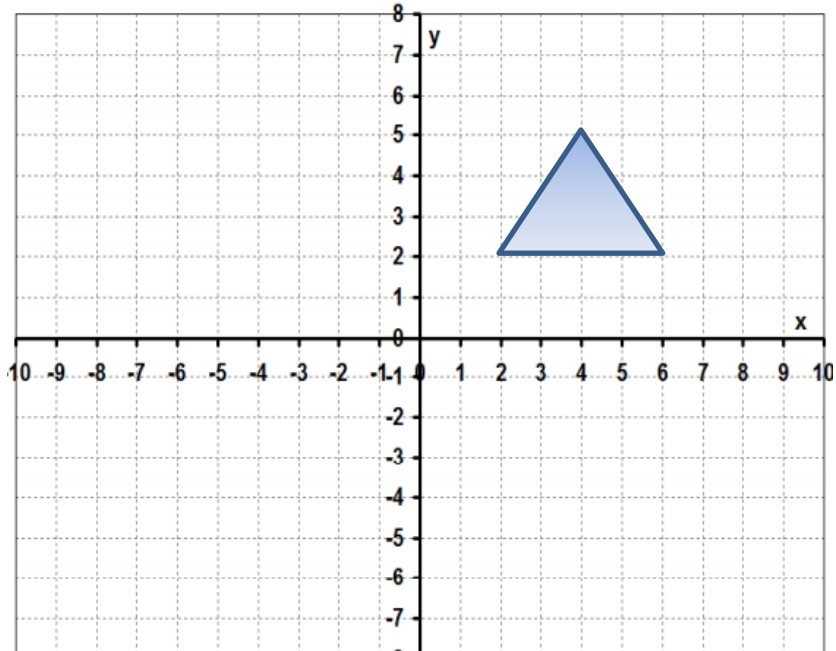
8

   A (0, 7)

   B (8, –5)

b.   draw a **reflection** of the triangle across the *x*-axis.

c. draw a **rotation** of the given triangle **90° clockwise** about its top corner.

14. Your job is to buy some pop for a community feast. Determine the unit price of each of these options:

6

a. the **2L** size bottles of pop **on sale** for $2.89

b. the six packs of 355 ml cans for $2.49

c. the flats of 24 - 355 ml cans for $10.95

   BONUS QUESTIONS (Extra 2 marks each if you need them)

a.   The circumference of a circle is 126 cm. What is its radius? (*hint: work backwards*)

b.   A bus has 36 passengers when it leaves Winnipeg. At the **first stop** it lets off **one** passenger, at the **second stop** it lets off **three** passengers, the **third stop** it lets off **five** passengers and then that pattern of two more additional passengers getting off at each successive stop until the bus is out of passengers. Determine **how many stops** the bus makes until it has no passengers.

c.   You need to paint some walls in the house. You have about 65 square metres (**65 m^2**) of wall to paint. The can of paint you bought in the USA only says how many square feet the can of paint will cover. Calculate how many square feet (**ft^2**) that you must paint.

d.   Calculate the number of minutes there are in nine weeks.

Thanks for being a good bunch!

See you in Grade 11 (*hopefully*) and we can get really busy using all these tools you have learned in Grade 10!