Name: Answer Key

Date: _____

Final Exam Practice C

Questions for this QuesT will be formatted into three columns:

Questions in column 1 are the basic, essential skills. You must answer these to pass. Answering these questions correctly will result in a 60% for this question.	Questions in column 2 are a tier up from column 1. Answering these correctly will result in an 80% for this question.	Questions in column 3 show mastery of the topic. Answering these correctly will result in a 100% for this question.

Please ask if you have any questions!

Simplify:

1a) $x^3 * x^2 =$ x^5

2a) $\frac{x^9}{x^3} =$ x^6

3a) $4^{2^2} =$ 4^4 or 256

Simplify:

$5x^5(4x^2) =$

$20x^7$

1b) $\frac{8x^5}{4x^4} =$ $2x$

2b) $(2x^3)^3 =$ $8x^9$

Simplify:

1c) $3x^2(2y^2)(4x^2)(z^3)(y^0)(2z^4) =$

$48x^4y^2z^7$

2c) $\frac{20y^6}{2x^5(2y^2)(5z^2)(z^0)(x^2)} =$

$\frac{20y^6}{20x^5(y^2)(z^2)(x^2)} = \frac{y^4}{x^7z^2}$

3c) $\frac{(4x^3)^2}{16x^5} = \frac{16x^6}{16x^5} = x$

Simplify:

4a) $\frac{1}{x^3} * \frac{1}{x^4} =$ $\frac{1}{x^7}$

5a) $-2^2 =$ -4

$(-2)^5 =$ -32

Simplify:

6a) $6x + 10 + 3x + 8 =$

$9x + 18$

Simplify:

3b) $\frac{20}{5x^2}(\frac{1}{4x^2})^2 =$

$\frac{20}{5x^2}(\frac{1}{16x^4}) = \frac{20}{80x^6} = \frac{1}{4x^6}$

4b) $(-4x^3)^2(2x^4) =$

$16x^6(2x^4) = 32x^{10}$

Simplify:

5b) $5x^2 + 4x + 1 - 8x + 2x^2 - 7 =$

$7x^2 - 4x - 6$

Simplify:

4c) $(\frac{3}{2x^3})^2(\frac{2}{3x^3})^3 =$

$\frac{9}{4x^6}(\frac{8}{27x^9}) = \frac{72}{108x^{15}} = \frac{4}{6x^{15}}$

$\frac{2}{3x^{15}}$

5c) $(\frac{2}{-3x^2})^3(\frac{-4}{4x^2})^2 =$

$\frac{8}{-27x^6}(\frac{16}{16x^4}) = \frac{128}{-432x^{10}} = \frac{8}{27x^{10}}$

Simplify:

6c) $3x^3 - 3x^2 + 6x + 3a - 7a + x^2 - 3x^3 + 2a - 6$

$-2x^2 + 6x - 2a - 6$

Expand:

7a) $8(x + 2) =$

$8x + 16$

Expand:

8a) $3x(4x^2 + 2x + 5) =$

$12x^3 + 6x^2 + 15x$

Simplify:

9a) $\frac{12x+6}{3} =$

$4x + 2$

Expand:

6b) $4x(2x^2 - 5x) =$

$8x^3 - 20x^2$

Expand:

7b) $-4x(3x^2 - 2x + 5) =$

$-12x^3 + 8x^2 - 20x$

Simplify:

8b) $\frac{8}{16x-32} =$

$\frac{1}{2x-4}$

Expand:

7c) $\frac{6}{2x^2}(\frac{1}{3x^2-6x})^1 =$

$\frac{6}{6x^4 - 12x^3} = \frac{1}{x^4 - 2x^3}$

Expand:

8c) $-4x^4(-2x^2 + 3x + 2) =$

$8x^6 - 12x^5 - 8x^4$

Simplify:

9c) $\frac{28x^2+24x}{4x} - 3(2x - 5) =$

$7x + 6 - 6x + 15$

$x + 21$

Solve for x:

10a) $\frac{1}{4}(8x+20) =$

$\frac{8x}{4} + \frac{20}{4} = 2x+5$

11a) $x + 4 = 11$

$-4 \quad -4$

$x = 7$

12a) $\frac{3x}{3} = \frac{27}{3}$

$x = 9$

Solve for x:

9b) $\frac{-1}{5}(15x-20) =$

$\frac{-15x}{5} + \frac{20}{5} = -3x+4$

10b) $x - 5 = -32$

$+5 \quad +5$

$x = -27$

11b) $(5)\frac{-x}{5} = 6(5)$

$-x = 30$

$x = -30$

Solve for x:

10c) $\frac{-3x}{2}(\frac{2}{3}x^2 - \frac{2}{3}x - 2) =$

$\frac{-6x^3}{6} + \frac{6x^2}{6} + \frac{6x}{2}$

$-x^3 + x^2 + 3x$

11c) $-7 - x = 22$

$+7 \quad +7$

$-x = 29$

$x = -29$

12c) $\frac{-10x}{-10} = \frac{35}{-10}$

$x = -3.5$

Solve for x:

13a) $4x + 5 = 21$
$-5 \quad -5$

$\frac{4x}{4} = \frac{16}{4}$

$x = 4$

14a) $\frac{x}{2} - 5 = 4$
$+5 \quad +5$

$(2)\frac{x}{2} = 9(2)$

$x = 18$

15a) $\frac{3(x+4)}{3} = \frac{23}{3}$

$x + 4 = 7.6$
$-4 \quad -4$

$x = 3.6$

Solve for the unknown:

12b) $2y - 8 = -20$
$+8 \quad +8$

$\frac{2y}{2} = \frac{-12}{2}$

$y = -6$

13b) $5 - \frac{x}{4} = -3$
$-5 \quad -5$

$(-4)-\frac{x}{4} = -8(-4)$

$x = 32$

14b) $\frac{6(2x-4)}{6} = \frac{48}{6}$

$2x - 4 = 8$
$+4 \quad +4$

$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

Solve for x:

13c) $-5 - \frac{5x}{2} = -35$
$+5 \quad +5$

$(-2)-\frac{5x}{2} = -30(-2)$

$\frac{5x}{5} = \frac{60}{5}$

$x = 12$

14c) $\frac{42}{x} - 4 = -2$
$+4 \quad +4$

$x\frac{42}{x} = 2x$

$\frac{42}{2} = \frac{2x}{2}$

$21 = x$

15c) $(10)\frac{7+x}{10} = 2(10)$

$7 + x = 20$
$-7 \quad -7$

$x = 13$

Solve for x:

16a) $5x = 2x + 15$

$-2x \quad -2x$

$\frac{3x}{3} = \frac{15}{3}$

$x = 5$

Solve for x:

15b) $7x - 6 = -4x + 38$

$+4x \quad +4x$

$11x - 6 = 38$

$+6 \quad +6$

$\frac{11x}{11} = \frac{44}{11}$

$x = 4$

Solve for x:

16c) $6x - 6 = 2(5x + 5)$

$6x - 6 = 10x + 10$

$-6x \quad -6x$

$-6 = 4x + 10$

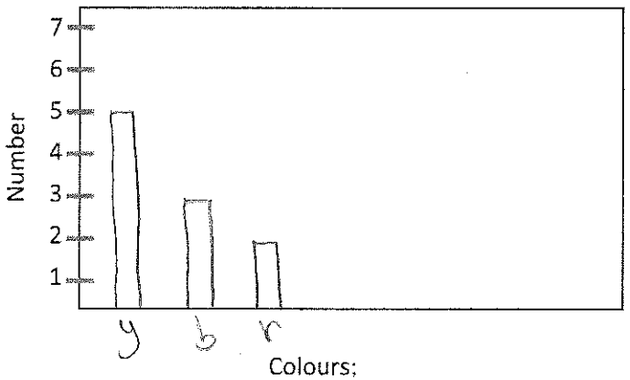
$-10 \quad -10$

$\frac{-16}{4} = \frac{4x}{4}$

$-4 = x$

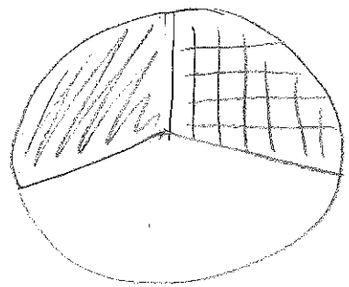
Graph the following information in a bar graph:

17a) 5 yellow, 3 blue, 2 red



Create a pie graph with the following information:

16b) 4 red, 4 green, 12 yellow



lll = red

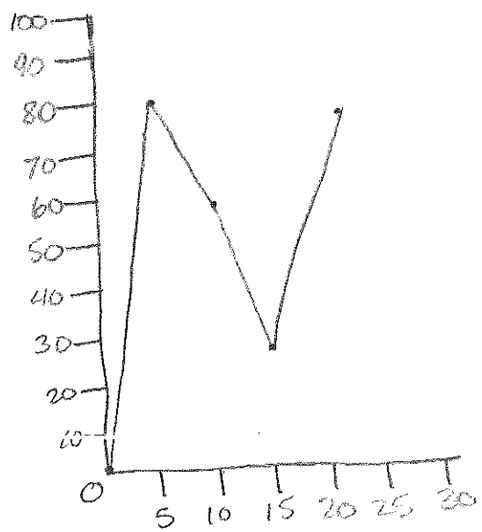
= green

□ = yellow

Create a line graph using the following information:

17c)

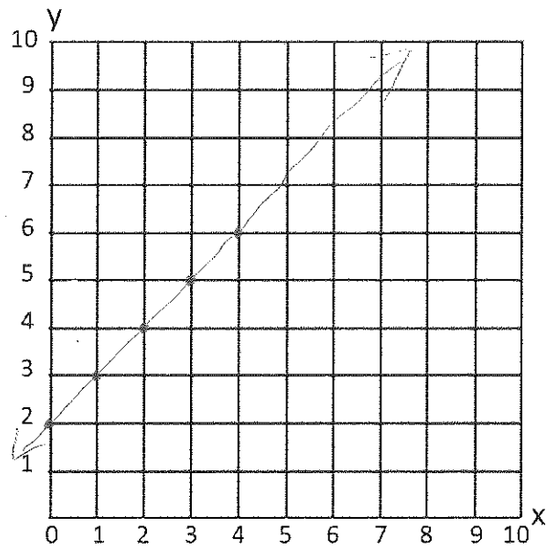
0 sec	0 km/hr
5 sec	80 km/hr
10 sec	60 km/hr
15 sec	30km/hr
20 sec	80 km/hr



Graph the following equation:

18a) $y = x + 2$

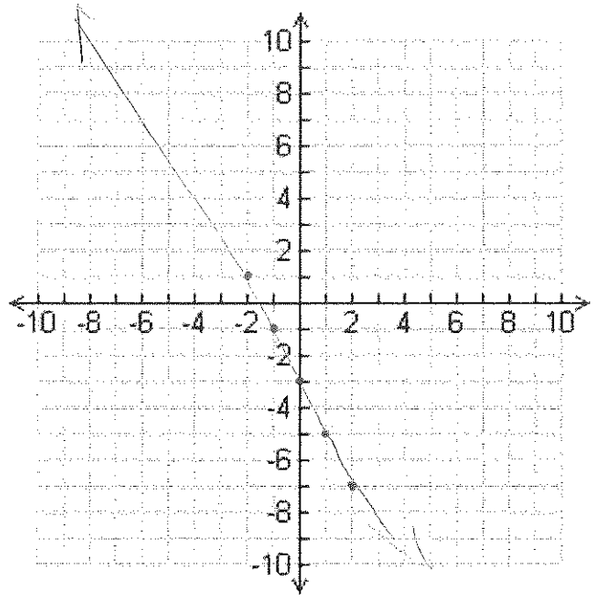
x	y
0	2
1	3
2	4
3	5
4	6



Graph the following equation

17b) $y = -2x - 3$

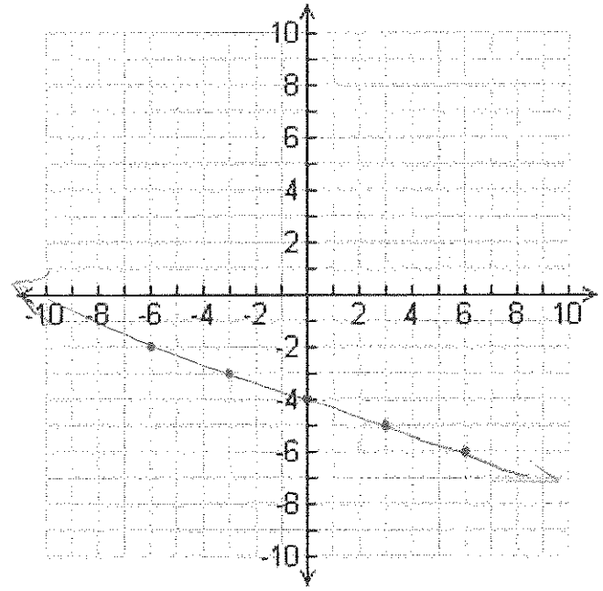
x	y
-2	1
-1	-1
0	-3
1	-5
2	-7



Graph the following equation

18c) $y = -\frac{1}{3}x - 4$

x	y
-6	-2
-3	-3
0	-4
3	-5
6	-6



19a) How many grams in a kilogram? ___
1000

How many millilitres in a litre? _____
1000

How many centimetres in a metre?___
100

20a) Convert 12000 grams (g) to kilograms (kg)

$12{,}000\,g \times \frac{1\,kg}{1000\,g} = 12\,kg$

21a) Convert 12 yards to feet (1 yard = 3 feet)

$12\,y \times \frac{3\,ft}{1\,yd} = 36\,ft$

Enter the next number in the sequence

22a) 16 21 26 31 36
+5 +5 +5 +5

18b) (No question here)

19b) Convert 53 litres (l) to millilitres (ml)

$53\,L \times \frac{1000\,ml}{1\,L} = 53{,}000\,ml$

20b) Convert 15 miles to kilometres (1.6 kilometres = 1 mile)

$15\,mi \times \frac{1.6\,km}{1\,mi} = 24\,km$

Enter the next number in the sequence

21b) 2 8 6 12 10 16
+6 -2 +6 -2 +6

19c) (No question here)

20c) Convert 21 cm to mm

$21\,cm \times \frac{10\,mm}{1\,cm} = 210\,mm$

21c) Convert 3 yards (y) to millimetres (mm) (1 yard = 3 feet, 1 foot = 12 in, 1 in = 2.54 cm)

$3\,y \times \frac{3\,ft}{1\,y} \times \frac{12\,in}{1\,ft} \times \frac{2.54\,cm}{1\,in} = 274.32\,cm$

$274.32\,cm \times \frac{10\,mm}{1\,cm} =$

2743.2 mm

Enter the next number in the sequence

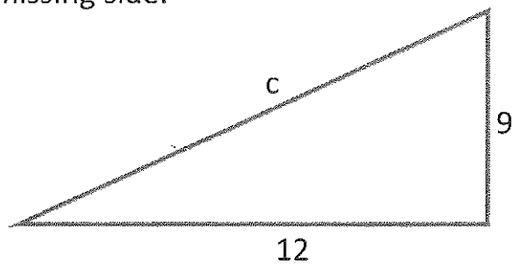
22c) 1 3 9 27 81 243
×3 ×3 ×3 ×3 ×3

Solve:

23a) $\sqrt{9} =$ 3

Find the missing side:

24a)



$a^2+b^2=c^2$

$9^2+12^2=c^2$

$81+144=c^2$

$225=c^2$

$\sqrt{225}=c$

$15=c$

Solve:

22b) Colten's yard is square. It is 81 sq. feet. How long is each side of the yard?

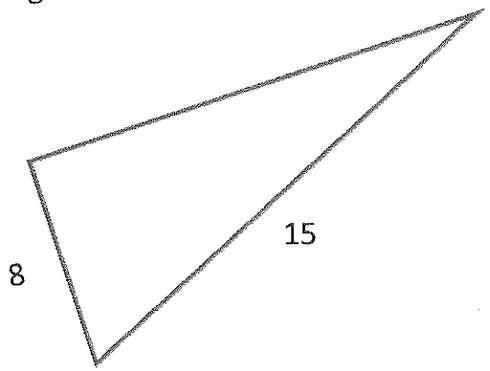
9

9|81

$\sqrt{81}=9$

Find the missing side:

23b)



$a^2+b^2=c^2$

$a^2+8^2=15^2$

$a^2+64=225$

$225-64=a^2$

$161=a^2$

$\sqrt{161}=a$

$12.7=a$

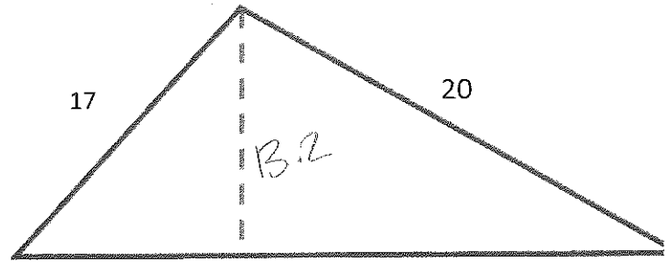
Estimate

23c) $\sqrt{48}$ $7^2=49$ $6^2=36$

6.9

Find the value of a

24c)



$a^2+b^2=c^2$

$a^2+15^2=20^2$

$a^2+225=400$

$400-225=a^2$

$175=a^2$

$\sqrt{175}=a$

$13.2=a$

$a^2+b^2=c^2$

$a^2+13.2^2=17^2$

$a^2+174.24=289$

$289-174.24=a^2$

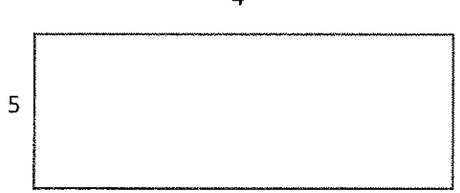
$114.76=a^2$

$\sqrt{114.76}=a$

$10.7=a$

Find the area of the rectangle:

25a)

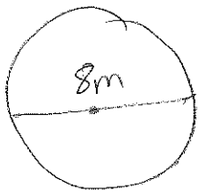


$a = l \times w = 4 \times 5$

$a = 20$

Find the area of the yard:

24b) Hannah has a circular yard. From one side to the other is 8m. What is the area of her yard?



$r = 4m$

$a = \pi r^2$

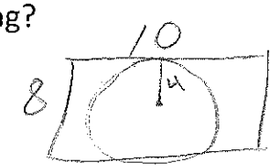
$= \pi (4)^2$

$= \pi (16)$

$a = 50.3$

Find the length of fence needed

25c) Shahla has a rectangular yard. It measures 10m by 8m. A post is placed right in the centre of the yard. If a string is tied to the post, and it just barely reaches the closest edgest of the yard, how much area does the string cover? How much area is there in the yard that isn't covered by the string?



A of circle $= \pi r^2$

$= \pi (4)^2$

$= \pi (16)$

$= 50.3$

A of yard $= l \times w$

$= 10 \times 8$

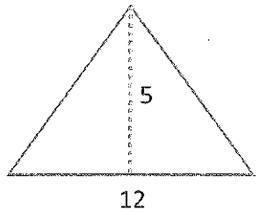
$= 80$

Area not covered $=$ A of Y $-$ A of C

$= 80 - 50.3$

$= 29.7$

Find the area of the triangle
26a)



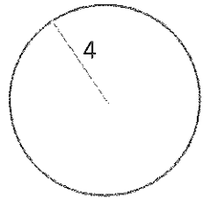
$a = \frac{b \times h}{2}$

$= \frac{12 \times 5}{2}$

$= \frac{60}{2}$

$a = 30$

Find the area of the circle
25b)



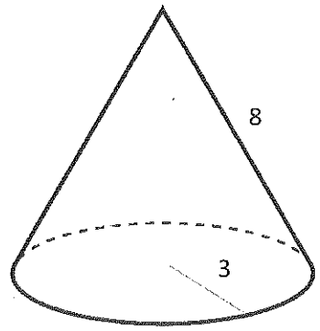
$a = \pi r^2$

$= \pi (4)^2$

$= \pi (16)$

$= 50.3$

Find the total surf
26c)



SA =

$\pi r^2 + \pi rs$

$= \pi (3)^2 + \pi (3)(8)$

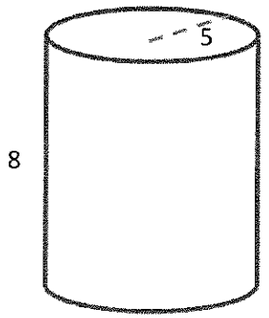
$= \pi (9) + \pi (3)(8)$

$= 28.3 + 75.4$

SA = 103.7

Find the volume

27a)



$V = \pi r^2 h$

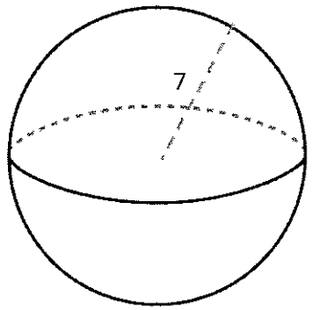
$= \pi (5)^2 (8)$

$= \pi (25)(8)$

$V = 628.3$

Find the volume:

26b)



$V = \frac{4}{3} \pi r^3$

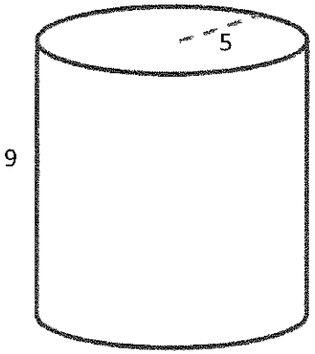
$= \frac{4}{3} \pi (7)^3$

$= \frac{4}{3} \pi (343)$

$= 1,436.8$

Find the surface area:

27c) This cylinder has no top or bottom



$SA = 2\pi rh + 2\pi r^2$

(No top or bottom)

$= 2\pi rh$

$= 2\pi (5)(9)$

$= 282.7$