APPRENTICESHIP AND WORKPLACE 11

DATA SHEET

FOR

ACTIVATION TEST

APPRENTICESHIP AND WORKPLACE 11

DATA SHEET

UNIT CONVERSION

	Common Imperial	Imperial and SI	SI
Length	1 mile = 1760 yards 1 mile = 5280 feet 1 yard = 3 feet 1 yard = 36 inches 1 foot = 12 inches	1 mile ≈ 1.609 km 1 yard = 0.9144 m 1 foot = 30.48 cm 1 inch = 2.54 cm	1 km = 1000 m 1 m = 100 cm 1 cm = 10 mm
Mass (Weight)	1 ton = 2000 pounds 1 pound = 16 ounces	2.2 pounds ≈ 1 kg 1 pound ≈ 454 g 1 ounce ≈ 28.35 g	1 t = 1000 kg 1 kg = 1000 g
Common Abbreviations	mile = mi yard = yd feet = ' or ft inch = " or in ton = tn pound = lb ounce = oz		kilometre = km metre = m centimetre = cm millimetre = mm tonne (metric ton) = t gram = g

FORMULAE

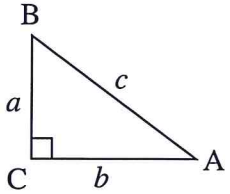
(Put your calculator in Degree Mode)

- Right triangles

$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$



Pythagorean Theorem

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

distance = speed × time

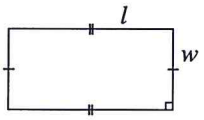
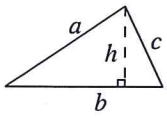
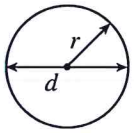
$$\frac{\%}{100} = \frac{IS}{OF}$$

APPRENTICESHIP AND WORKPLACE 11

DATA SHEET

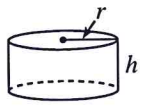
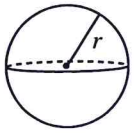
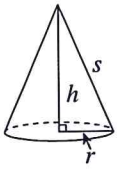
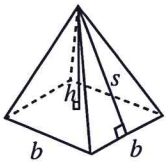
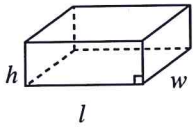
GEOMETRIC FORMULAE

Key Legend	
l = length	P = perimeter
w = width	C = circumference
b = base	A = area
h = height	SA = surface area
s = slant height	V = volume
r = radius	
d = diameter	

Geometric Figure	Perimeter	Area
Rectangle 	$P = 2l + 2w$ **or** $P = 2(l + w)$	$A = lw$
Triangle 	$P = a + b + c$	$A = \frac{bh}{2}$
Circle 	$C = \pi d$ **or** $C = 2\pi r$	$A = \pi r^2$

APPRENTICESHIP AND WORKPLACE 11

DATA SHEET

Geometric Solid	Surface Area	Volume
Cylinder 	$A_{top} = \pi r^2$ $A_{base} = \pi r^2$ $A_{side} = 2\pi rh$ $SA = 2\pi r^2 + 2\pi rh$	$V = (\text{area of base}) \times h$
Sphere 	$SA = 4\pi r^2$ **or** $SA = \pi d^2$	$V = \frac{4}{3}\pi r^3$
Cone 	$A_{side} = \pi rs$ $A_{base} = \pi r^2$ $SA = \pi r^2 + \pi rs$	$V = \frac{1}{3} \times (\text{area of base}) \times h$
Square-Based Pyramid 	$A_{triangle} = \frac{1}{2}bs$ (for each triangle) $A_{base} = b^2$ $SA = 2bs + b^2$	$V = \frac{1}{3} \times (\text{area of base}) \times h$
Rectangular Prism 	$SA = wh + wh + lw + lw + lh + lh$ **or** $SA = 2(wh + lw + lh)$	$V = (\text{area of base}) \times h$
General Right Prism	$SA =$ the sum of the areas of all the faces	$V = (\text{area of base}) \times h$
General Right Pyramid	$SA =$ the sum of the areas of all the faces	$V = \frac{1}{3} \times (\text{area of base}) \times h$

APPRENTICESHIP AND WORKPLACE 11

ACTIVATION TEST

TO BE HANDED INTO

CONNECT ED

FOR MARKING

Name: _____

Teacher: _____

School: _____

Total _____ = _____ %

APP AND WORK MATH 11

ACTIVATION TEST

Name _____ Date _____

Simplify.

1. $-8+17-12+4$ 1. _____

2. $12-(25-21)$ 2. _____

3. $\frac{4}{5}+\frac{3}{2}-\frac{9}{10}$ 3. _____

4. $\frac{30}{8}\cdot\frac{12}{5}\cdot\frac{2}{3}$ 4. _____

5. 3^3 5. _____

6. 2^7 6. _____

7. Determine the square root of 36. 7. _____

8. Simplify: $\sqrt[3]{125}$ 8. _____

Solve.

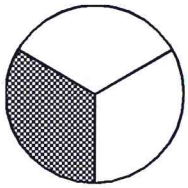
9. $y + 5 = 9$ 9. _____

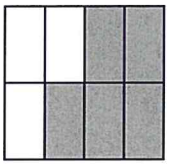
10. $3y - 5 = 16$ 10. _____

11. $\frac{a}{18} = \frac{1}{2}$ 11. _____

12. $\frac{12}{x} = \frac{48}{112}$ 12. _____

What percent of the diagram is shaded?

13.  13. _____

14.  14. _____

15. Find 50% of 22. 15. _____

16. Find 15% of 40. 16. _____

17. 60 is what percent of 75? 17. _____

18. 9 is what percent of 72? 18. _____

19. 16 is 50% of what number? 19. _____

20. 12 is 15% of what number? 20. _____

21. Convert the following. 21. _____

$32\,\text{m} = \_\_\_\,\text{cm}$

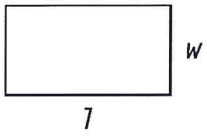
22. $32.5\,\text{mm} = \_\_\_\,\text{m}$ 22. _____

23. $2\,\text{in} = \_\_\_\,\text{cm}$ 23. _____

24. $10{,}580\,\text{ft} = \_\_\_\,\text{mi} \_\_\_\,\text{yd} \_\_\_\,\text{ft}$ 24. _____

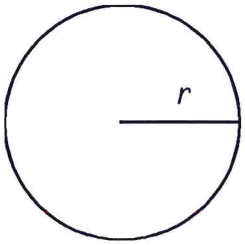
Find the perimeter.

25. $l = 4\,\text{m}$, $w = 2\,\text{m}$ 25. _____



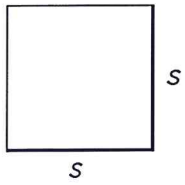
Find the circumference.

26. $r = 10\,\text{m}$ 26. _____



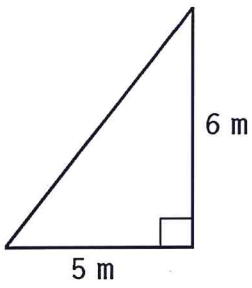
Find the area.

27. $s = 3\,\text{cm}$



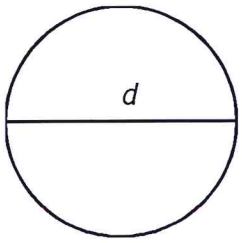
27. _____

28.



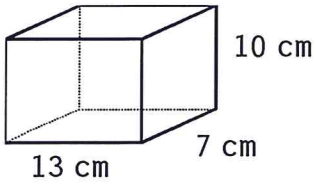
28. _____

29. $d = 12\,\text{ft}$

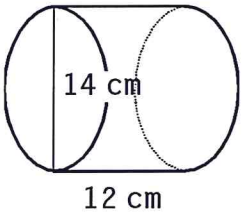


29. _____

Find the surface area.

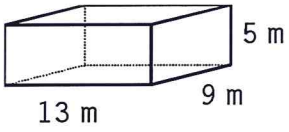
30. 

30. _____

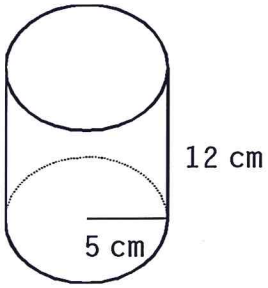
31. 

31. _____

Find the volume.

32. 

32. _____

33. 

33. _____

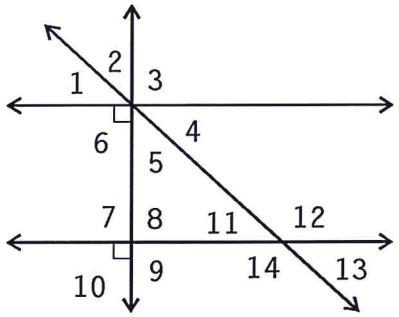
34. Given the volume of a cube is $216\,cm^3$, determine the surface area of the cube.

34. _____

35. What is the perimeter of this square to one decimal place.

35. _____

Refer to the diagram to answer the questions.



36. ∠12 and ∠14 are _____ angles. 36. _____

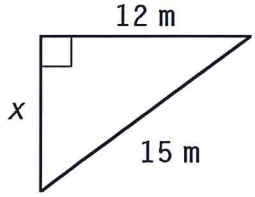
37. ∠11 and ∠4 are _____ angles. 37. _____

38. ∠11 and ∠12 are _____ angles. 38. _____

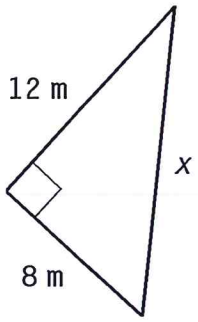
39. ∠4 and ∠12 are _____ angles. 39. _____

Find the length of the missing side.

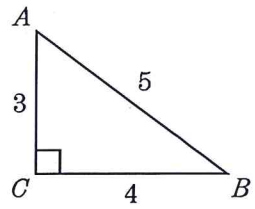
40. 40. _____



41. 41. _____



42. Find $\sin \angle A$. 42. _____



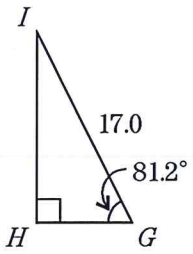
43. Find $\tan \angle B$. 43. _____

44. Find $\tan 42.4^\circ$. 44. _____

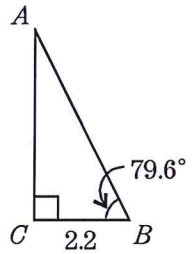
45. If $\sin \angle A = 0.5592$, find $\angle A$ to the nearest degree. 45. _____

46. If $\tan \angle F = 3.078$, find $\angle F$ to the nearest degree. 46. _____

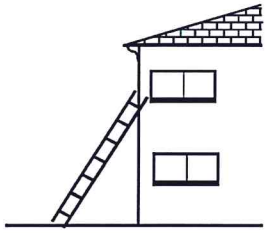
47. Find GH to the nearest tenth. 47. _____



48. Find AB to the nearest tenth. 48. _____



49. A 12 foot long ladder reaches a point 6 feet high on a house. What angle does the ladder form with the house? 49. _____



50. A wire 5.2 meters long is attached to the top of a flagpole 4.8 meters long. Approximately what is the measure of the angle the wire makes with the ground? Round your answer to the nearest tenth of a degree. 50. _____