Key

1. Marnie typically works 25 hours per week and earns $11.75 per hour. The manager offered Marnie an 8% raise. What will be Marnie's new hourly rate?

A. $0.94
B. $2.00
C. $12.69
D. $13.75

$11.75 \times 0.08 = 0.94$

$11.75 + 0.94 = 12.69$

2. Ling earns $12 per hour for a 40-hour workweek. She is paid time-and-a-half for every hour worked over 40 hours during a week. Ling earned $930 last week. How many overtime hours did she work?

A. 25
B. 37.5
C. 52
D. 77.5

$12 \times 40 = 480$

$930 - 480 = 450$

$450 \div (12 \times 1.5) = 25$ (1F)

3. A waiter earns $12.85 per hour and must give 10% of his tips to the kitchen staff. He worked 8 hours last Saturday and made $238 in tips. What was his gross pay for the shift?

A. $126.60
B. $250.85
C. $317.00
D. $340.80

$238 \times 0.10 = \$23.80$

$238 - 23.80 = 214.20$ TIPS

$12.85 \times 8 = 102.80 + 214.20 = 317$

4. In which situation would straight commission provide more income for the employee compared to earning a salary?

A. The product being sold is difficult to sell.
B. The product being sold has a small target market.
C. The employee selling the product is a good salesperson.
D. The employee selling the product is an inexperienced salesperson.

5. The cost of running a herring boat is $8700 for 2 weeks. The catch is sold for $0.12 per pound. How many pounds of herring must be caught and sold in two weeks in order to break even?

A. 725
B. 1 044
C. 10 400
D. 72 500

$8700 \div 0.12 = 72500$ pounds

6 Julie's new employer gives her a choice of two different methods of earning income.

Method 1:
- a wage of $20 per hour for the first 150 hours
- $22 per hour for more than 150 hours

Method 2:
- 5% commission on monthly sales up to $25 000
- 10% commission on sales greater than $25 000

She worked 173 hours last month and had total sales of $33 000. Identify which method would pay her the most and what her income would be.

A. Method 1, $3506
B. Method 1, $3806
C. Method 2, $2050
D. Method 2, $3300

150 x 20 = 3000
173 - 150 = 23 x 22 = 506
3506

0.05 x 25000 = 1250
0.10 x (33000 - 25000)
8000 800
2050

$3506 - M#1

7 An employee has a weekly income of $416.15 and is assigned claim code 1. Calculate his total weekly deductions and taxes.

A. $24.47
B. $32.65
C. $57.12
D. $95.32

CPP - 17.27
EI - 7.20
Fed 26.75
Prov 5.90

8 Which factors determine the difference between gross pay and net pay?

I.	tax deductions ✓
II.	CPP ✓
III.	EI ✓
IV.	commission

A. II only
B. IV only
C. II and III only
D. I, II and III only

9 Farrah is deciding between two jobs.

Job 1: work in a retail store for $1100 per month.
Job 2: go tree planting and earn 13¢ per tree planted.

What is the fewest number of trees she would need to plant per month to earn more than the retail store salary?

A. 85
B. 1 430
C. 8 462
D. 14 300

$1100 \div 0.13 =$

8461.53

10 Laurie's time card is shown below. What are her total regular and overtime hours?

Laurie Brown

	Regular		Overtime	
	h	*m*	*h*	*m*
Sunday				
Monday	8			45
Tuesday	6	30		
Wednesday	5	50		
Thursday	8		1	20
Friday	7	30		
Saturday				
Total	34	110 min		

34 60+50 min

1h

= 35h 50min or 2h 5min

1h 20 min
+ 45 min
1h 65 min

A. Regular: 36 h Overtime: 2 h
B. Regular: 35 h 50 min Overtime: 2 h 5 min
C. Regular: 34.83 h Overtime: 1 h 65 min
D. Regular: 33 h 50 min Overtime: 2.08 h

11 Calculate the total number of hours and minutes Jim worked the week of July 13.

Name: Jim Week: July 13	
Day	Hours Worked
Monday	5.5
Tuesday	4.0
Wednesday	6.25
Thursday	4.0
Friday	4.5

A. 23 hours 35 minutes
B. 23 hours 80 minutes
C. 24 hours 15 minutes
D. 24 hours 25 minutes

24.25 h
.25 x 60 = 15 min
24h 15 min

12 Deshawn earns a 15% commission on her total sales. One week her sales totalled $4200. What was her total commission?

A. $210
B. $280
C. $420
D. $630

4200 x 0.15 = 630

13 Jean-Claude's gross pay is $410.12 weekly. His deductions are 23%. What amount is deducted weekly from his pay?

410.12 x 0.23 = 94.33

A. $9.43
B. $94.33
C. $315.79
D. $400.69

14 Sheryl earns an hourly wage of $9.30 and works 40 hours per week. She is assigned claim code 1. Calculate her weekly net pay.

9.30 x 40 = 372
CPP 15.08
EI 6.44
Fed - 20.55
Prov - 2.40
-44.47

A. $289.28
B. $318.43
C. $327.53
D. $339.95

15 Rohit earned $6/h for his first 500 hours of employment. After completing these hours his wage increased to $8/h. What was the percent increase of Rohit's wage?

8 - 6 = $2 increase

$\frac{2}{6}$ = 2 ÷ 6 = .33 or 33%

A. 25
B. 30
C. 33
D. 40

16 Sean earns $12.40 per hour and is paid time and a half for any hours worked over 40 within one week. One week last month his gross income was $589. How many overtime hours did Sean work?

A. 5.0
B. 7.5
C. 45.0
D. 47.5

$12.40 \times 40 = 496$

$589 - 496 = 93$

$93 \div (12.40 \times 1.5) = 5$

17 A sales associate earns $8.50 per hour and receives a 1% commission on all sales. The calculation below was used by a payroll clerk to find the gross earnings of an associate who worked 40 hours one week with sales of $6000. Identify where the error was made in the calculation.

I II III IV

$(40)8.50 + 6000(0.1)$ not 1%

0.01

A. I
B. II
C. III
D. IV

18 Isaac runs a painting business. He received $12 000 from a client for a job. The job had the following costs:

- supplies $1500
- paint $3200
- 4 employees earning $12/h

It took 32 hours to complete the job. How much money was left for Isaac?

A. $384
B. $1536
C. $5764
D. $6236

1500
3200
$4 \times 12 \times 32 = 1536$
6236

$12000 - 6236 = 5764$

19 Sandra earns 8% of her sales. Last week she sold $12 000 worth of flooring. What were her weekly earnings?

0.08 x 12 000 = 960

A. $96
B. $500
C. $960
D. $9600

20 Todd sells furniture and earns either $390.13 per week or $8\frac{1}{2}\%$ commission on his total weekly sales, whichever is greater. Given his sales were $4561.94, calculate Todd's gross pay for the week.

0.085 x 4561.94 = 387.76
NOT greater

A. $387.76
B. $390.13
C. $684.29
D. $777.89

21 A surveyor from Winnipeg is offered two jobs in British Columbia:

Prince George	Vancouver
• $48 000 annually • 10% pay raise after 1 year	• $4 333.34 monthly • 5% pay raise after 1 year

What is the difference in salaries after the one-year increase?

4333.34 x 0.05
= 216.67

PG
48000 x 0.10 = 4800
48000 + 4800
= 52800

VAN
4333.34 + 216.67
4550.01 /mo
x 12
54,600.08

Subtract
1800

A. $800
B. $1800
C. $4000
D. $6600

22 Determine the combined federal and provincial tax deductions for an employee whose weekly gross pay is $389.50. Use claim code 1.

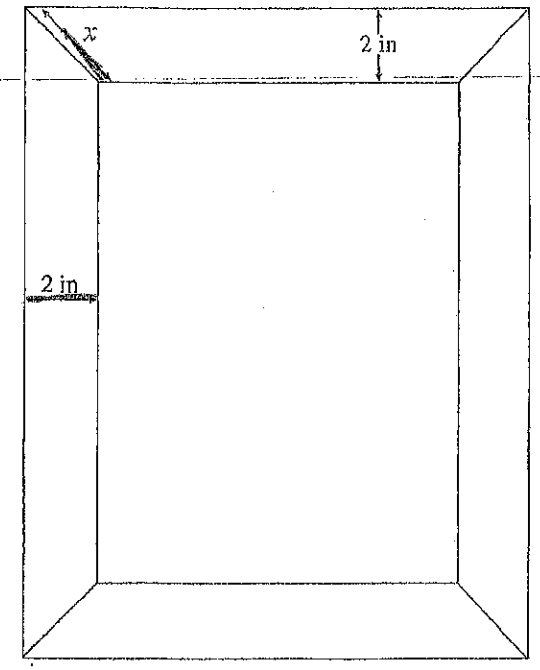
Fed 22.80
Prov 3.85
26.65

A. $22.75
B. $25.90
C. $26.65
D. $64.90

Chapter 3: Math 10AW

name: key

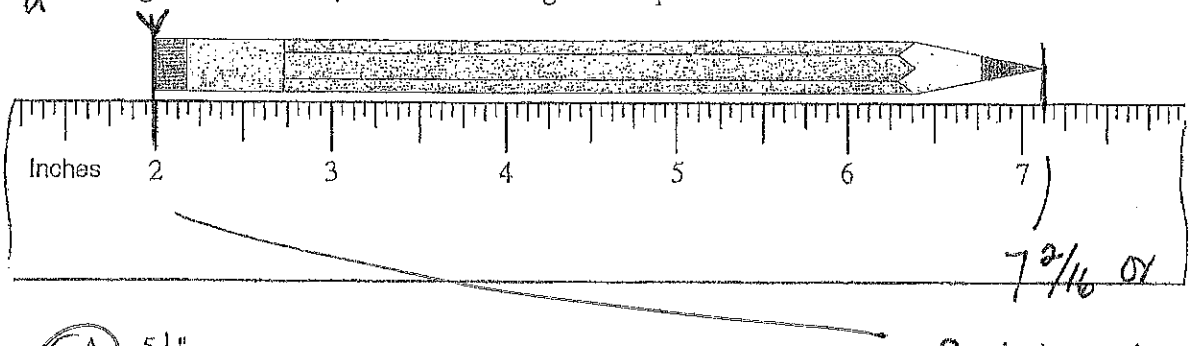
1 A picture frame is 2 inches wide. Estimate the length of the diagonal join, x.



bigger than 2 but not 2x as big.

A. 2 in
B. 3 in
C. 4 in
D. 8 in

2 Using the ruler below, determine the length of the pencil.



7 2/16 or 7 1/8.

Subtract 2 so 5 1/8

A. $5\frac{1}{8}$"
B. 5.2"
C. $5\frac{1}{4}$"
D. $7\frac{1}{8}$"

3 A pair of scissors is 20 cm long. Estimate this length in imperial units.

A. 8 inches
B. 50 inches
C. 1 foot
D. 2 feet

$20cm \div 2.5 = 8 inches$

4 The dimensions of a door are 7 feet by 36 inches. Express these dimensions in yards.

A. 7×3
B. $2\frac{1}{3} \times 1$
C. $2\frac{1}{3} \times 3$
D. 7×1

$7ft \div 3 = 2\frac{1}{3}$

$36 \div 12 \div 3 = 1$

$2\frac{1}{3} \times 1$

5 A ribbon is 4 feet 10 inches long. It needs to be cut into pieces that are 8 inches in length. How many full length pieces will the ribbon provide?

means $\div$

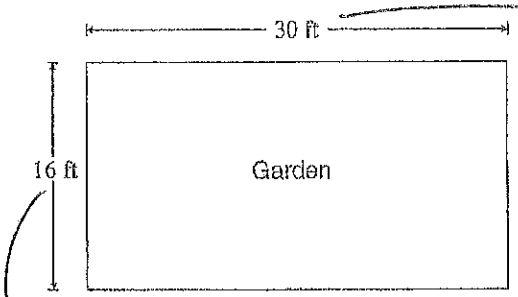
A. 5
B. 6
C. 7
D. 8

$4 \times 12 = 48 inches + 10 = 58 inches$

$\div 8$

7.25

6 Flowers are to be planted six inches apart along the perimeter of the garden represented below. Estimate the number of flowers needed.



A. 15
B. 45
C. 90
D. 180

$30 \times 12 = 360$

$\div 6 = 60$ each side.

$16 \times 12 = 192 \div 6$

$= 32$ each side

$60 + 60 + 32 + 30$

$= 184$

7 An interior designer cuts a 14 m rope into 20 equal pieces. Calculate the length of each piece.

A. 0.7 cm
B. 1.4 cm
C. 70 cm
D. 140 cm

$14m \div 20 = 0.7m$ or $70cm$ $(\times 100)$

8 A drawer is 11 inches wide. Estimate this width in centimetres.

A. 4
B. 9
C. 14
D. 25

$11 \times 2.5 =$

9 In which set are the SI prefixes correctly matched with the powers of ten?

A. kilo 10^3 ✓
deca 10^1 ✓
centi 10^{-2} ✓

B. hecto 1000 ✗
deci $\frac{1}{100}$ or 0.01 ✗
milli $\frac{1}{10\,000}$ or 0.0001 ✗

C. hecto 10^3 ✗
deca 10^1 ✓
milli 10^{-2} ✗

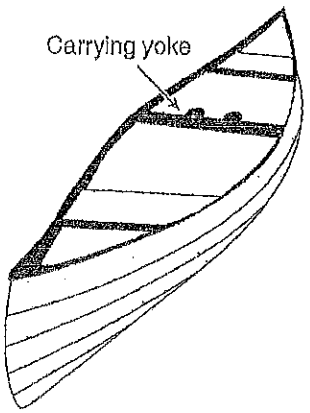
D. kilo 1000 ✓
centi 100 $\frac{1}{100}$
deca $\frac{1}{10}$ or 0.1 deci

10 As an estimation strategy, what could be used to approximate one metre?

A. the length of your foot
B. the length of your arm
C. the length of your hand
D. the width of your shoulders

Chapter 3: Math 10AW name: Key

1 A canoe often has a wooden yoke across its widest part so that it may be carried upside down on a person's shoulders. A boat builder must trim a 36" yoke to fit into a canoe $32\frac{1}{2}$" across. How much wood should be trimmed from each end so that the centre of the yoke will be over the centreline of the canoe?



$36 - 32\frac{1}{2}$

$= 3.5$

$\div 2$ (each side)

$= 1.75$ or $1\ 3/4$

(A.) $1\frac{3}{4}$"
B. $3\frac{1}{2}$"
C. $16\frac{1}{4}$"
D. 18"

2 Baseboards are to be installed on all the walls of a rectangular-shaped room 24'–4" (×2) long and 18'–6" (×2) wide. The room has two 31" openings that do not require baseboards. Which calculation could be used to find the total length of baseboards in feet?

subtract

$18 \times 12 + 6$ (to inches) $+ 24 \times 12 + 4$ (to inches)

A. $[24(12)+4]+[18(12)+6]-2(31)$

(B.) $\dfrac{2[(24\cdot12+4)+(18\cdot12+6)]-2(31)}{12}$

C. $\dfrac{(24.3+18.5)2}{12}$

D. $2[31+12(24)+4+18(12)+6]$

2 walls each: $2\ [18\times12+6]+[24\times12+4]-2(31)$

$\div 12$ to get back into feet.

3 The length of a fireplace mantle is 6'– 9". Express this length in metres.

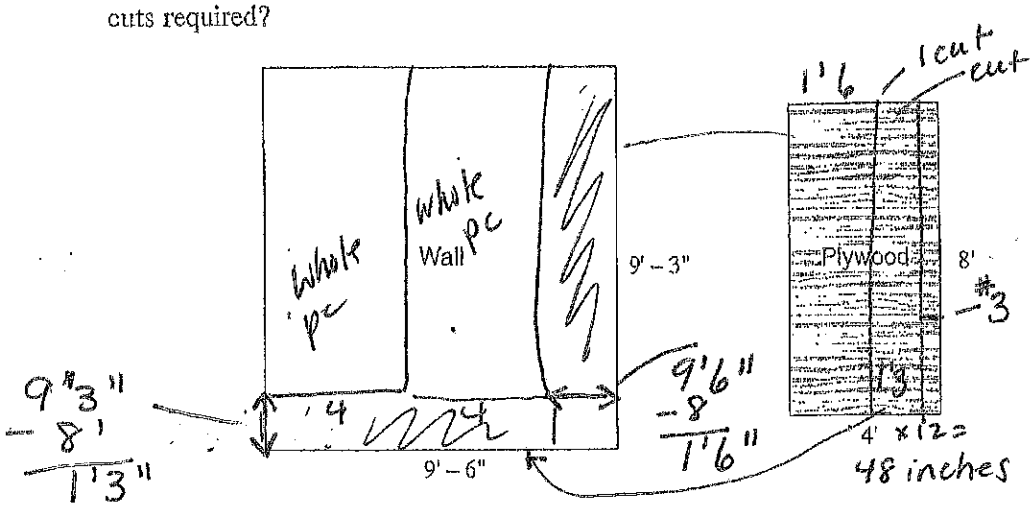
$6 \times 12 = 72 + 9 = 81$ inches

(A.) 2.1
B. 4.5
C. 20.6
D. 205.9

$81 \times 2.54 = 205.74$ cm

$205.74 \div 100 = 2.1$ m

4 Craig must completely cover the wall represented below with 4'×8' sheets of plywood. A lumberyard charges him a fee per cut made to the plywood. What is the fewest number of cuts required?



A. 2
B. 3
C. 4
D. 5

4ft − 1'6 = 2ft 6"

5 The foundation walls of a cabin are constructed as follows:

- $8\frac{1}{4}$" thick concrete
- $2\frac{7}{8}$" thick insulation board on both interior and exterior sides
- $\frac{1}{2}$" thick cedar on the exterior side only

Which solution would be used to determine the total thickness of the foundation walls?

A. $2\left(2\frac{7}{8}+\frac{1}{2}\right)+8\frac{1}{4}$

B. $8\frac{1}{4}-\left(2\frac{7}{8}+\frac{1}{2}\right)$

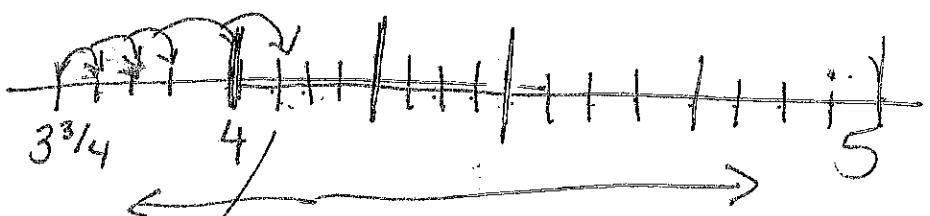
C. $8\frac{1}{4}+2\frac{7}{8}+\frac{1}{2}$

D. $\frac{1}{2}+2\left(2\frac{7}{8}\right)+8\frac{1}{4}$

$2\frac{7}{8}" \times 2 + \frac{1}{2}" + 8\frac{1}{4}"$

6 On a ruler measuring in inches, what measure is one-quarter the distance between the $3\frac{3}{4}$" mark and the 5" mark?

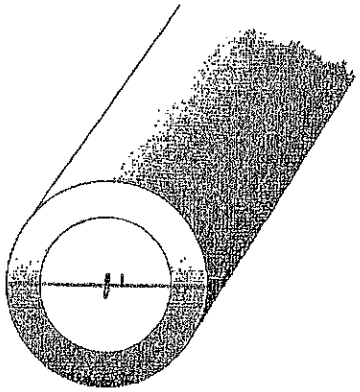
A. $4\frac{1}{16}$
B. 4.1
C. $4\frac{1}{8}$
D. $4\frac{1}{4}$



20 dashes / 4 = 5 dashes

$4\frac{1}{16}$

7 Use a ruler to measure the outside diameter of the pipe diagram below. Use your measurement to estimate the outside circumference of the pipe.



Note: This diagram is actual size.

$d = 2.6$

$r = 1.3$

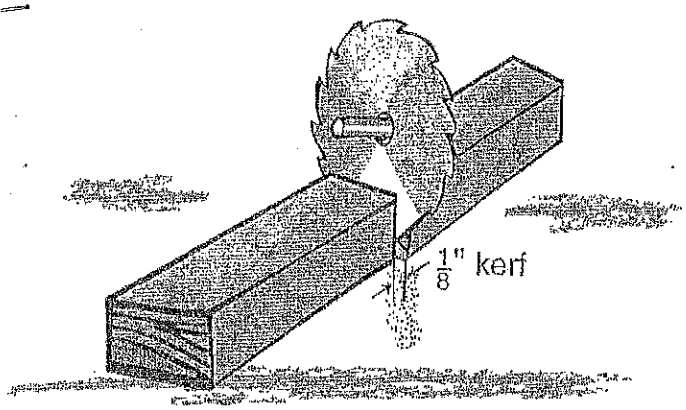
$C = 2\pi r$

$= 2\pi(1.3)$

8.16

A. 6 cm
B. 9 cm
C. 12 cm
D. 27 cm

8 Eight foot long, 2×4 lumber used in building picnic tables is cut according to a pattern. A 4'– 5" length is cut, then a 1'– 4" length, then a 1'– 7" length. Each cut makes a $\frac{1}{8}$" kerf (wastage).



What is the amount of wood remaining after the three lengths have been cut?

A. $3\frac{5}{8}$"
B. $7\frac{5}{8}$"
C. $7\frac{7}{8}$"
D. 8"

xin $53" + 16" + 19 = 88"$ or 7'4in

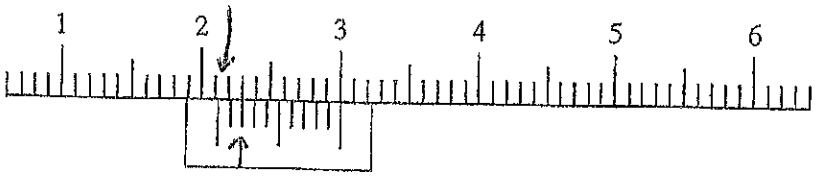
$4'-5" + 1'4" + 1'7"$

$+ 3 \times \frac{1}{8}$ (3 cuts)

8ft – 7'4 $\frac{3}{8}$"

96 – $88\frac{3}{8}$ in = $7\frac{5}{8}$

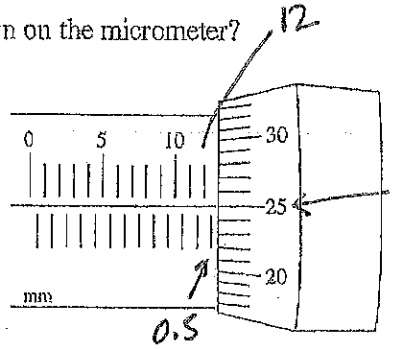
9 The Vernier calliper shown below is calibrated in SI units. What is the measurement on the calliper?



A. 2.01 cm
B. 2.12 cm
C. 2.55 cm
D. 3.05 cm

2.1
+ .02
2.12

10 What measurement is shown on the micrometer?



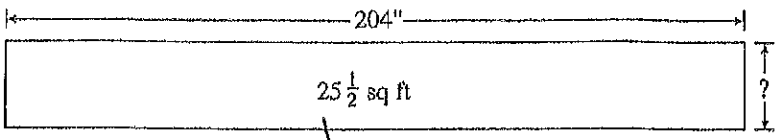
A. 0.25 mm
B. 12.00 mm
C. 12.50 mm
D. 12.75 mm

12.5
.25
12.75

Chapter 4: Math 10 RW

name: _____

1 The area of the diagram below is $25\frac{1}{2}$ square feet. What is its width in inches?

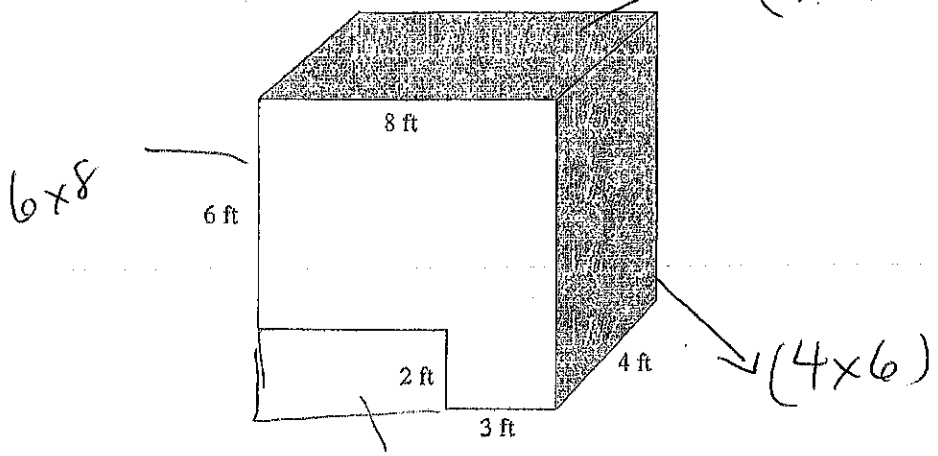


25.5 × 12 = 306

306 ÷ 204 = 1.5 inches

A. $1\frac{1}{2}$
B. 8
C. 17
D. 18

2 The prism shown has three visible faces. Determine which solution is reasonable to calculate the surface area of the visible faces.



(8×4)

6×8

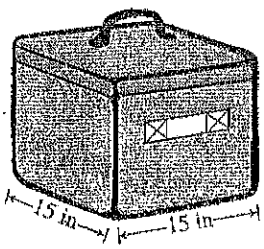
(4×6)

3×2

A. $(8\times8)-(2\times5)+2(8\times4)$
B. $(6\times8)-(3\times2)+(4\times6)+(8\times4)$
C. $2(6\times5)+(3\times8)+(4\times8)$
D. $2(8\times4)+(5\times6)+(2\times3)$

3 The maximum size (length + width + height) allowed per fare-paying customer for baggage on an aircraft is 157 cm. Which of the following pieces of luggage would be over the size allowance?

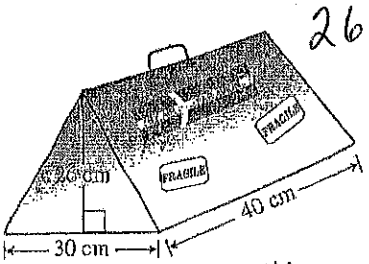
A.



15+15+15 = 45 in

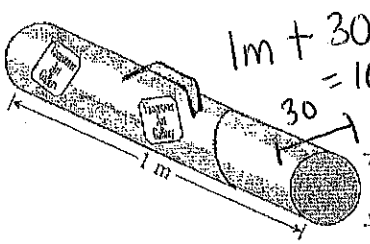
45 × 2.54 = 114.3

B.



26+30+40 = 96 cm

C.

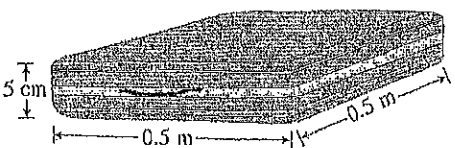


1m + 30cm + 30cm

= 100+30+30

= 160cm

D.

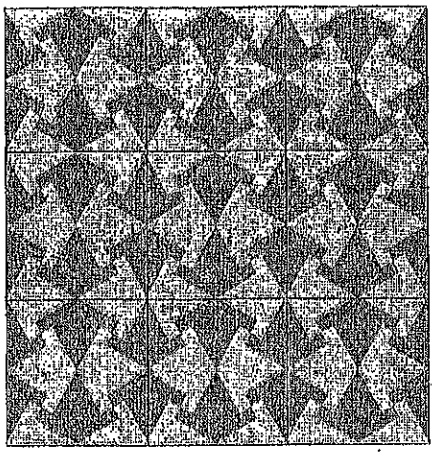


5 cm + .5m + .5m

= 5 + 50 + 50 cm

= 105

Estimate the ratio of dark fabric to light fabric.



A. 1:1
B. 1:3
C. 2:3
D. 3:4

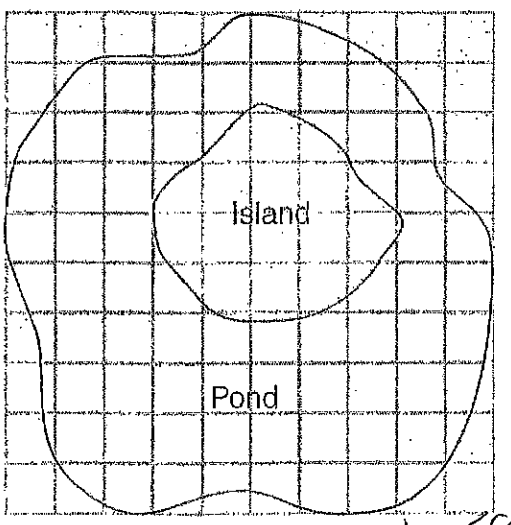
5 The area of a picture is 2925 mm^2. Express this area in cm^2.

A. 2.925
B. 29.25
C. 292.5
D. 29 250

$2925 \div 10 \div 10 = 29.25\ cm$

÷ by 10 2x
1 for each side
in area.

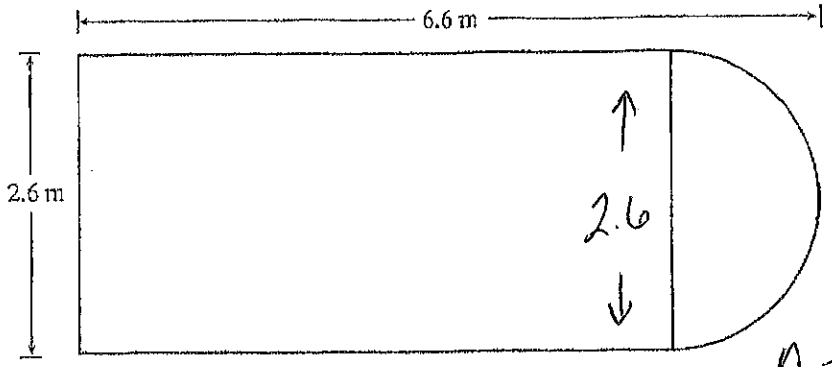
6 Each square on the grid below represents one square metre. What is the approximate area of the surface of the pond?



59

A. 30 – 40 m^2
B. 50 – 60 m^2
C. 65 – 75 m^2
D. 85 – 95 m^2

7 In a gymnasium, a basketball "key" is a painted area on the floor. It consists of a semicircle plus a rectangle, as shown below. Find the area of the semicircle.



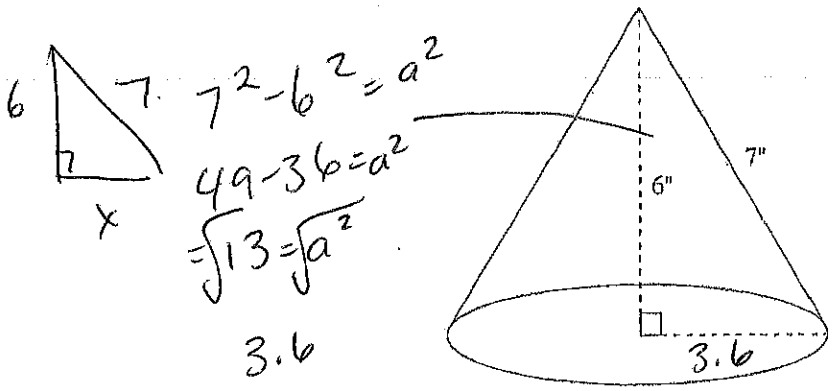
$r = \frac{2.6}{2} = 1.3$

$A = \frac{\pi r^2}{2} = \frac{\pi(1.3)^2}{2}$

$= 2.65$

(A) 2.65 m^2
B. 5.31 m^2
C. 10.62 m^2
D. 21.24 m^2

8 Find the surface area of the cone drawn below.



$7^2 - 6^2 = a^2$

$49 - 36 = a^2$

$\sqrt{13} = \sqrt{a^2}$

3.6

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

$\pi(3.6)^2 + \pi(3.6)(7)$

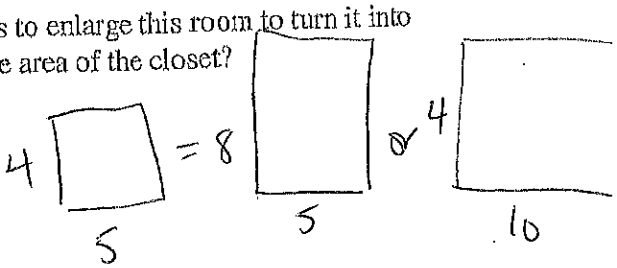
$40.72 + 79.17$

$= 119.88$

A. 75.4 sq in
(B) 120.13 sq in
C. 245.0 sq in
D. 468.2 sq in

9 A walk-in closet is 4 m wide and 5 m long. The owner wants to enlarge this room to turn it into an office. What changes should he make to exactly double the area of the closet?

(A) double the width
B. double both the length and the width
C. extend both the length and the width by 1 metre
D. extend both the length and the width by 2 metres



10 The top of a 20 foot long railing is to be painted. The diameter of the roller to be used is 8.9 cm. Paint needs to be replenished after 6 rotations of the roller. How many times does the painter have to add paint to his roller?

A. 12
B. 9
C. 5
D. 4

8.9cm = d

$C = 2\pi r$ or $\pi d = \pi(8.9) = 27.96$cm

$27.96\text{cm} \times 6 = 167.76\text{cm}$

$167.76\text{ cm} \div 30.48 = 5.5\text{ ft}$ $20 \div 5.5 =$ 3-4x

11 The diameter of a tray is 42 cm and the diameter of a glass is 56 mm. Based on math calculations, a server thought he would be able to fit 56 glasses onto the tray. In fact, he is able to fit only 37 glasses. Approximately how much space on the tray is not covered by glasses?

A. 1800 cm^2
B. 475 cm^2
C. 185 cm^2
D. 155 cm^2

$r = \frac{42}{2} = 21$

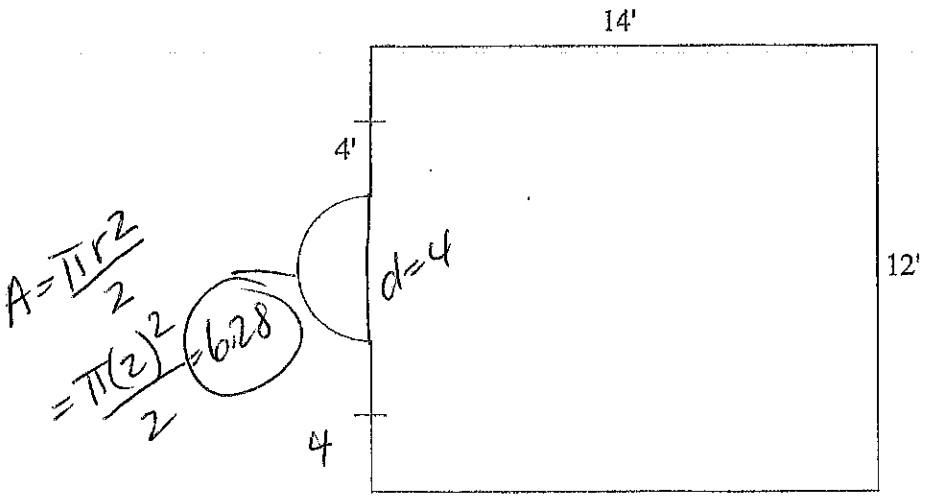
$r = \frac{56}{2} = 28$mm or 2.8cm

$37 \times A_{glass} = 37 \times \pi(28)^2 = 911.31$

$A_{tray} = \pi(21)^2 = 1385.44$

474.13

12 A carpet cleaner charges by the square foot. Use the diagram below to find the total carpet area.



$A = \frac{\pi r^2}{2}$

$= \frac{\pi(2)^2}{2} = 6.28$

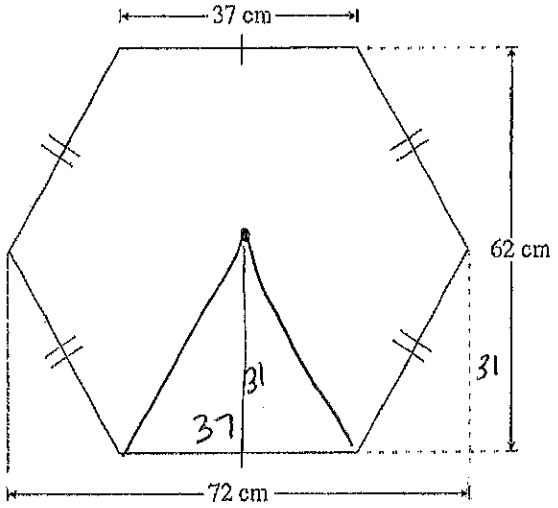
A. 168.0 sq ft
B. 174.3 sq ft
C. 180.6 sq ft
D. 218.3 sq ft

$14 \times 12 = 168$

$168 + 6.28$

$= 174.3$

13. A patio table is in the shape of a hexagon as drawn below. Calculate the area of the table.



A. 1689.5 cm^2
B. 2294 cm^2
C. 3379 cm^2
D. 4464 cm^2

$\frac{b \times h}{2} = \frac{37 \times 31}{2} = 573.5 \times 6$

$= 3441$

Chapter 5: Math 10 AW

Name: Key

1 How many sheets of $\frac{5}{8}$" plywood are in a sling load (or stack) 5' high?

A. 37
B. 38
C. 80
D. 96

$5' = 5 \times 12 = 60"$

$60 \div 5/8 = 96$

2 A hand-held scientific calculator is measured and the volume is found to be 101. What units are likely to be included with this answer?

A. mm^2
B. cm^3
C. m^3
D. L

3 The average temperature in the city of Regina is –28 degrees Celsius. What is the equivalent temperature in degrees Fahrenheit?

A. 7.2
B. –18.4
C. –33.3
D. –44.0

$-28C =$

$F = \frac{9}{5}(-28) + 32$

4 How many British gallons are equivalent to 24 US gallons?

A. 20.0
B. 22.8
C. 25.2
D. 28.8

$24 \div 1.2 = 20$

5 Two barrels are filled with oil. One holds 50 US quarts and the other one holds 50 British quarts. What is the difference between their volumes in litres?

A. 0.18
B. 9.5
C. 10.9
D. They contain the same amounts.

50 US $\div 4 = 12.5$ gal(US)

$\div 0.26 = 48.07$ L

50 UK $\div 4 = 12.5$ gal(UK)

$\times 1.2 = 15$ gal(US)

$\div 0.26 = 57.69$ L

Chapter 6 & Math 10 AW

name:

Key

1 A 3 kg bag of sugar costs $6.00. A 500 g box of sugar cubes costs $2.50. A restaurant owner is considering which packaging he should buy for customers to use in their tea and coffee. Which of the following statements are true?

$ 6/3kg = 2/kg

I.	The unit price of bagged sugar is $2.00/kg, and the unit price of sugar cubes is $5.00/kg. ✓
II.	Boxed sugar cubes are less messy to serve to diners than sugar from a large bag ✓
III.	In order to get 3 kg of sugar cubes, the owner would need to spend $15.00 ✓

A. III only
B. I and II only
C. II and III only
D. I, II and III

2 One summer, the cost of oranges was $0.50/lb. The next summer the cost was $0.75/lb. What was the percent increase?

A. 25
B. 50
C. 125
D. 150

$0.75 - 0.50 = 0.25$

$\frac{0.25}{0.50} = .50$ or 50%

3 Organize the items below from lowest to highest unit price.

I.	500 g for 89¢ (.5kg)
II.	2.2 kg for $3.98
III.	2.0 kg for $3.54

0.89/.500 = 1.78/kg

$3.98/2.2 = 1.81/kg

$3.54/2 = 1.77/kg

A. I, III, II
B. II, I, III
C. II, III, I
D. III, I, II

4 For the end of the year party, Mark and Vic bought soda pop.

Mark	Vic
5 L for $9.35	12 – 355 mL cans for $8.50

9.35 ÷ 5 = 1.87/L

12 x 355 = 4260mL or 4.26L

8.50/4.26 = 1.99/L

Whose purchase was better and by how much?

A. Vic by $0.85
B. Mark by $0.12/L
C. Vic by $0.50/L
D. Both purchases are equal

5 A Canadian audio engineer hires an editor in Denmark who charges 348 krone per hour. Use the table below to determine the editor's hourly rate in Canadian dollars.

ISO-Code	Country (Currency)	Units per 1 CAD	CAD per 1 Unit
DKK	Denmark (Krone)	5.0026	0.1999
EUR	Europe (Euro)	0.6705	1.4914
FJD	Fiji Island (Dollar)	1.5526	0.6441
GHS	Ghana (Cedi)	1.0939	0.9142
HKD	Hong Kong (Dollar)	7.7213	0.1866

A. 69.57
B. 233.33
C. 519.01
D. 1740.87

348/h x 0.1999

6 In 2008, Sasha was travelling from Aberdeen, Scotland, to Toronto, Canada. She changed her 545.45 British pounds (GBP) to Canadian dollars (CAD) upon her arrival. How many Canadian dollars did she receive? (1 GBP = 2.20 CAD)

A. 247.93
B. 765.00
C. 1 200.00
D. 12 000.00

545.45 x 2.2 = 1199.99
or 1200.

7 At Computerland, 8 gigabytes of RAM costs $259. How would the cost of 20 gigabytes of RAM be calculated based on the amount of RAM?

A. $\frac{259}{20} = \frac{8}{x}$
B. $\frac{259}{x} = \frac{20}{8}$
C. $\frac{259}{20} = \frac{x}{8}$
D. $\frac{259}{8} = \frac{x}{20}$

$259/8 = 32.38/RAM

$\frac{259}{8} = \frac{x}{20}$

Use the following table to answer questions 9 and 10.

Canadian Bank Foreign Exchange Rates for Buying and Selling (cash rates for June 28, 2009)

Country	Currency Name/ Currency Code	Bank Buying Rate (CAD)	Bank Selling Rate (CAD)
Australia	Dollar (AUD)	0.8788	0.9926
Brazil	Real (BRL)	0.5046	0.6578
Canada	Dollar (CAD)	—	—
Cayman Is.	Dollar (KYD)	1.2568	1.5000
Euro	Euro (EUR)	1.5552	1.6877
France	Franc (FRF)	0.2222	Refer to Euro
Great Britain	Pound (GBP)	1.8413	1.9681
Hong Kong	Dollar (HKD)	0.1389	0.1597
India	Rupee (INR)	0.01964	0.03034
Indonesia	Rupiah (IDR)	0.000089	0.000130
Israel	Shekel, New (ILS)	0.2554	0.3241
Japan	Yen (JPY)	0.011647	0.012579
Mexico	Peso (MXN)	0.0760	0.0927
Philippines	Peso (PHP)	0.02084	0.02839
Saudi Arabia	Riyal (SAR)	0.2734	0.3338
South Africa	Rand (ZAR)	0.1233	0.1598
South Korea	Won (KRW)	0.000774	0.001050
Switzerland	Franc (CHF)	1.0213	1.1085
United States	Dollar (USD)	1.1210	1.1810

8 A customer wants to exchange 200 CAD for Swiss Francs (CHF). How should the clerk at the bank calculate the number of CHF to give him?

A. Use 1.0213, since the customer is buying CHF, and divide 200 by 1.0213.
B. Use 1.0213, since the customer is buying CHF, and multiply 1.0213 by 200.
C. Use 1.1085, since the bank is selling him CHF, and divide 200 by 1.1085.
D. Use 1.1085, since the bank is selling him CHF, and multiply 1.1085 by 200.

9 Stella wants to exchange 1500 CAD for Cayman Island dollars (KYD). How many KYD will she get?

A. 750
B. 1000
C. 1875
D. 2250

1500 ÷ 1.5 = 1000

10 To fill a coffee mug at a local shop costs $2.50. The shop sells coffee beans for $12 per pound. Each pound makes enough coffee to fill the mug 100 times. Approximately how many times greater is the cost of drinking the coffee at the shop compared to drinking it at home?

A. 2
B. 5
C. 20
D. 240

12 / 100 = 0.12 / cup

2.50 ÷ 0.12 = 20

20

11. Mrs. Jones has a budget of $330 to purchase 50 calculators for her classes. She must not exceed her budget. She is deciding between two stores:

- **Store 1** sells scientific calculators for $6.45 each. $50 \times 6.45 = 322.50$
- **Store 2** sells scientific calculators in boxes of 8 for $49.95 per box. They will not sell individual calculators. 7 boxes ($7 \times 8 = 56$) $7 \times 49.95 = 349.65$.

Which statement explains where Mrs. Jones should buy the calculators and why?

A. Store 1 because the unit price is lower.
B. Store 2 because the unit price is lower.
C. Store 1 because she will not go over budget with the purchase of 50 calculators.
D. Store 2 because she will have extra calculators for the following school year.

12. The cost of 6 hot dog buns is $2.49 and the cost of 1 dozen tofu wieners is $2.98. Determine the price per serving (1 bun + 1 wiener).

A. 46¢
B. 51¢
C. 66¢
D. 91¢

$2.49 / 6 = 0.42$
$2.98 \div 12 = 0.24$ } + 66¢

13. Hairstyling scissors originally priced at $119.99 are reduced to $95.99. Calculate the percent decrease in price.

A. 20
B. 24
C. 25
D. 80

$119.99 - 95.99 = 24$

$\frac{24}{119.99} = 0.20$ or 20%

14. In 2008 the starting wage for a barista in Wyoming was 8.50 USD per hour. At the same period the starting wage for a barista was 5.35 GBP per hour in London, England. Calculate the difference between the two wages. (1.0000 USD = 0.6049 GBP).

A. 0.34 USD
B. 3.15 USD
C. 5.21 USD
D. 5.26 USD

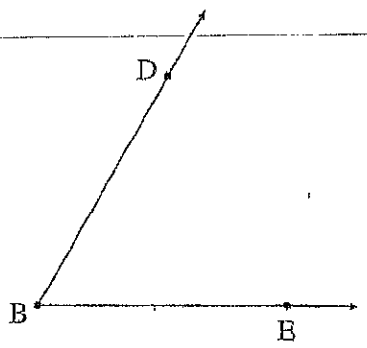
8.50 - USD

$5.35 \div 0.6049 = 8.84$ - USD

Chapter 7 : Math10AW

name: Key

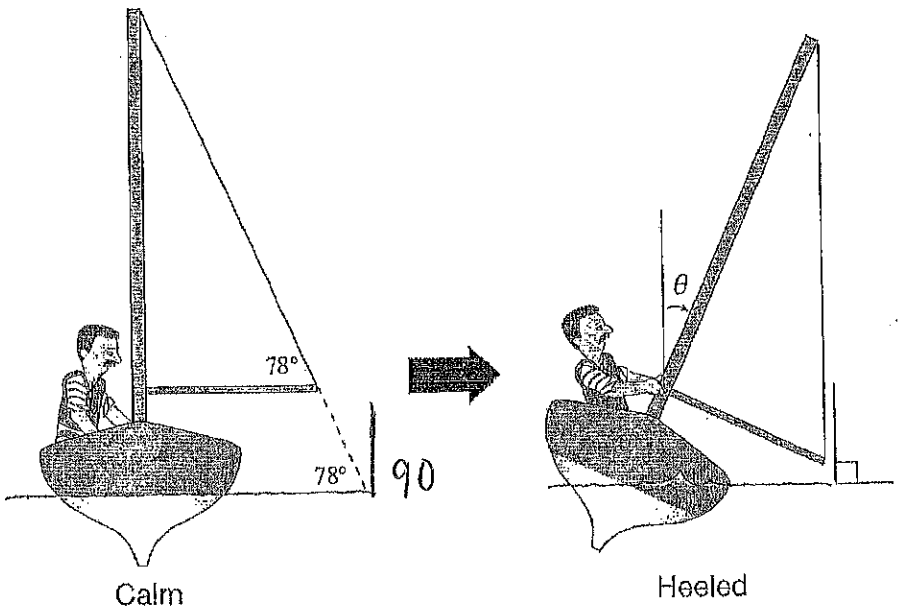
1 Estimate the measure of $\angle DBE$.



Note: This diagram is drawn to scale.

A. 22.5°
B. 30°
C. 60°
D. 90°

2. A sailboat heels (tips slightly) when the wind fills the sail. The edge of the sail makes a 78° angle with the water when the wind is calm. What degree of heel will make the sail edge perpendicular to the water in the diagram below?

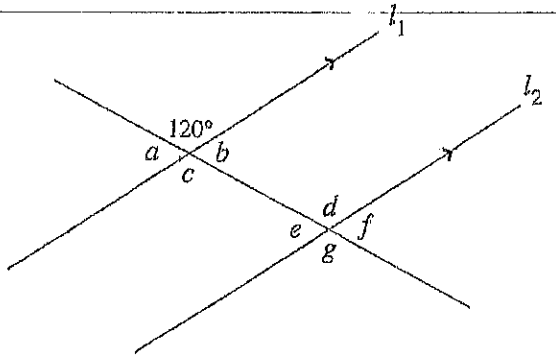


A. 12°
B. 78°
C. 88°
D. 102°

3 Andrew says to Susan "I'm going to bisect this right angle into three angles of 30° each." Which sentence describes Andrew's statement?

A. It is correct because to bisect means to divide equally.
B. It is incorrect because to bisect means to divide in half.
C. It is correct because 3 angles of 30° each add up to a 90° angle.
D. It is incorrect because 3 angles of 30° do not form a right angle.

4 Which angles measure 60° in the diagram below?



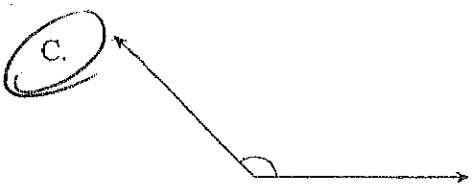
A. $\angle a$ and $\angle b$ only
B. $\angle d$ and $\angle g$ only
C. $\angle e$ and $\angle f$ only
D. $\angle a$, $\angle b$, $\angle e$ and $\angle f$ only

5 Which angle drawn below measures approximately 135° ?

A.

B.

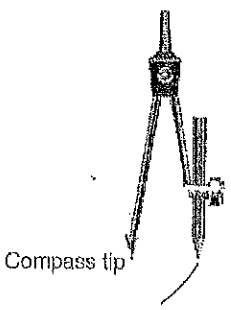
C.

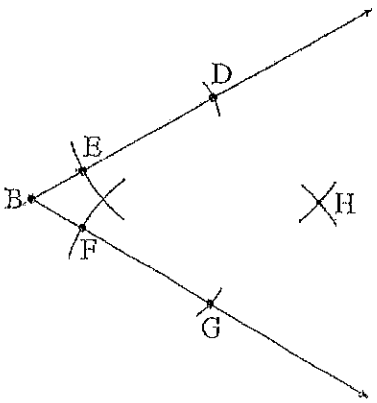


D.

Note: These diagrams are drawn to scale

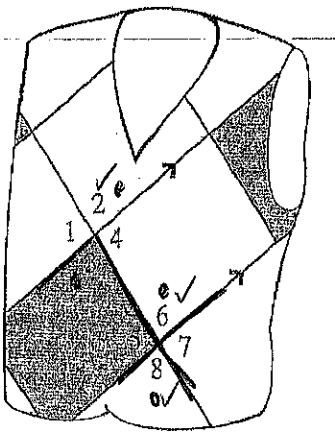
6 To bisect ∠DBG, in what order would a compass tip touch the points?





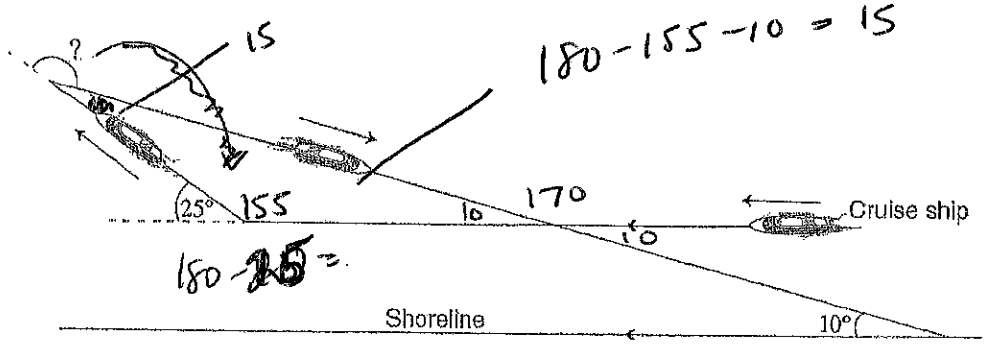
A. D, H, G
B. B, D, G
C. E, D, H
D. DGH

7 The diamond pattern of the golf vest has parallel lines as shown below. Which angle(s) is (are) congruent to $\angle 3$?



A. $\angle 2$ only
B. $\angle 2$ and $\angle 7$ only
C. $\angle 2$, $\angle 6$ and $\angle 8$ only
D. $\angle 2$, $\angle 6$, $\angle 7$ and $\angle 4$ only

8 A cruise ship travelling parallel to the shoreline turns 25° to the right. It continues in this direction before making a sharp right hand turn so that it is now pointing at a 10° angle to the shoreline.



What is the measure, in degrees, of the second turn?

A. 145
B. 165
C. 325
D. 345

180 - 15 =

9. Gaugan attempted to complete a half rotation on his skateboard. He managed to turn 85°. How many more degrees were needed to complete the half rotation?

A. 5
B. 15
C. 95
D. 275

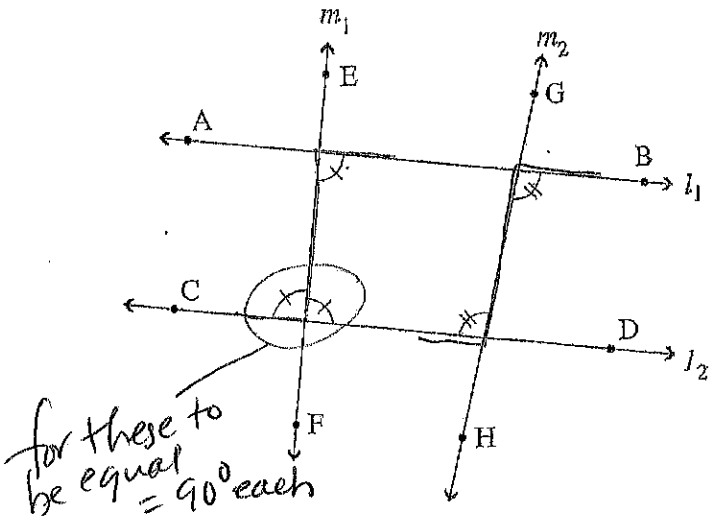
180 = ½ rotation

180 - 85 =

10 In the diagram below which line is:

i) perpendicular to l_1

ii) parallel to l_1 ?



for these to be equal = 90° each

$l_1 \parallel l_2$

$AB \parallel CD$

$m_1 \perp$ to CD

A. i) none ii) l_2

B. i) none ii) none

C. i) m_1 ii) l_2

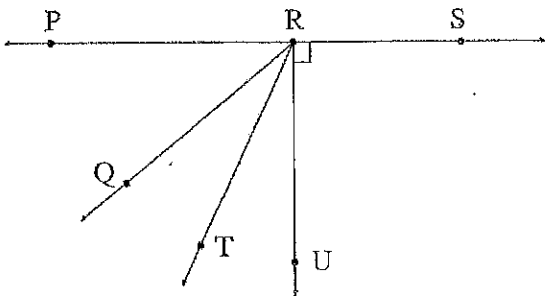
D. i) m_2 ii) none

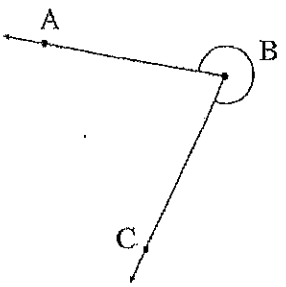
11 Identify an acute angle, an obtuse angle and a reflex angle from the diagrams below.

between 90° & 180°

less than 90°

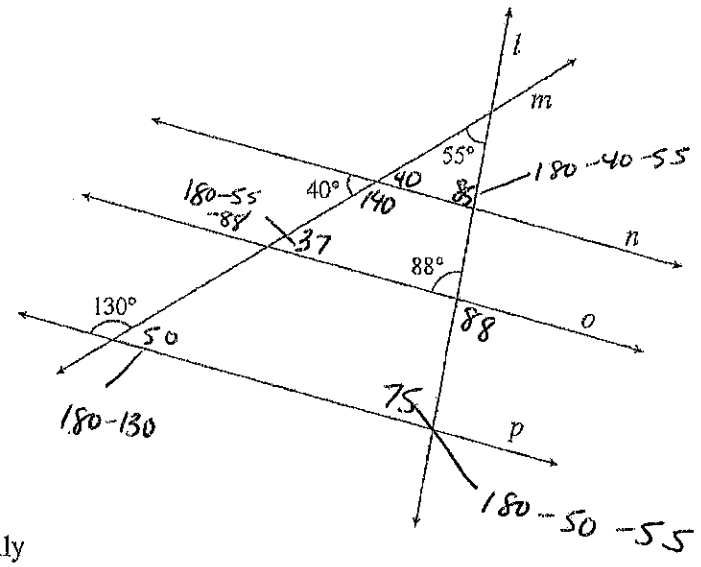
greater than 180°





	Acute	Obtuse	Reflex
A.	∠PRQ ✓	∠ABC ✗	∠PRS ✗
B.	∠PRQ ✓	∠URS ✗	∠PRS ✗
C.	∠QRT ✓	∠SRT ✓	∠ABC ✓
D.	∠QRT ✓	∠PRS ✗	∠ABC ✓

12 In the diagram below, which lines are parallel?



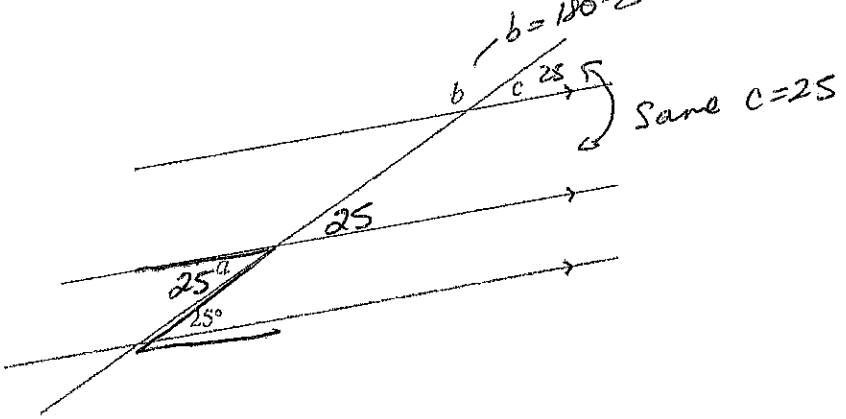
A. $n \parallel p$ only

B. $n \parallel o$ only

C. $n \parallel o \parallel p$

D. no parallel lines

13 In the diagram below, what are the measures of $\angle a$, $\angle b$ and $\angle c$?



A. $\angle a = 25°$, $\angle b = 155°$, $\angle c = 25°$

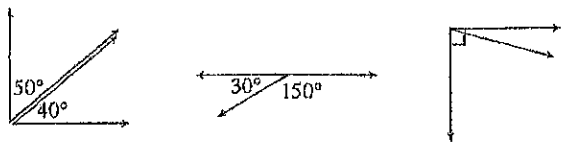
B. $\angle a = 155°$, $\angle b = 25°$, $\angle c = 155°$

C. $\angle a = 155°$, $\angle b = 25°$, $\angle c = 25°$

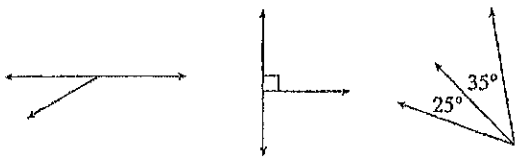
D. $\angle a = 25°$, $\angle b = 165°$, $\angle c = 15°$

14 Which set of diagrams shows two examples of complementary angles and one example of supplementary angles?

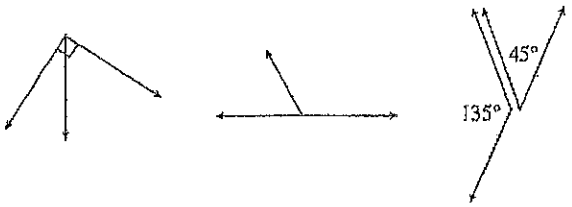
A.



B.



C.

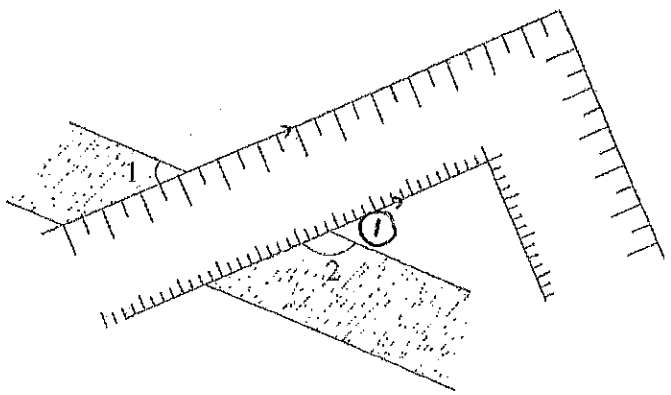


D.

Complementary add to = 90

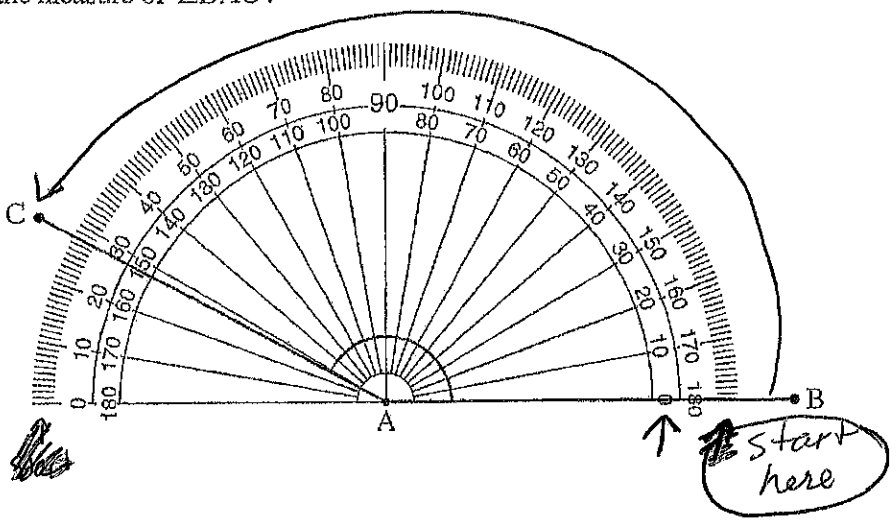
Supplementary add to equal 180

15 A carpenter's square is placed on a board. What is the relationship between $\angle 1$ and $\angle 2$ in the diagram below?



A. corresponding
B. supplementary
C. complementary
D. alternate interior

16 What is the measure of $\angle BAC$?



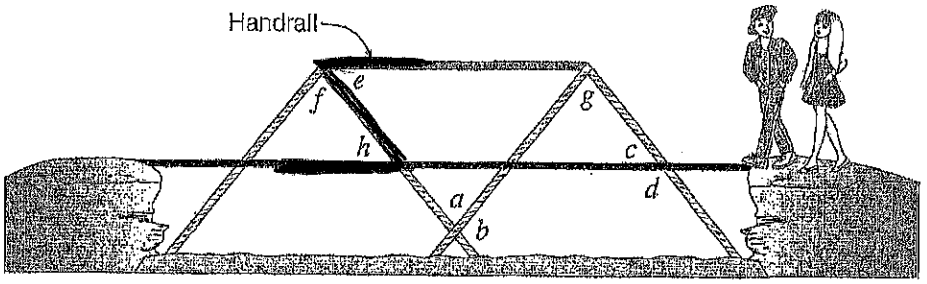
A. 28°
B. 32°
C. 150°
D. 152°

17 Rank the following types of angles from the smallest to the greatest measure:

I.	acute	1
II.	obtuse	3
III.	reflex	5
IV.	right	2
V.	straight	4

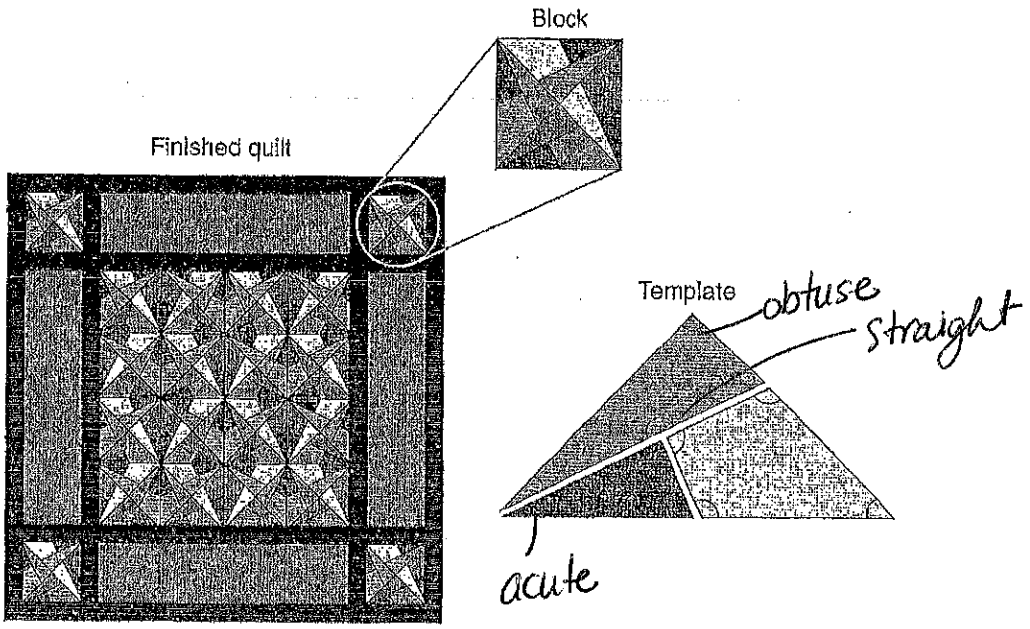
A. I, IV, II, V, III
B. I, IV, V, III, II
C. III, I, IV, V, II
D. III, I, V, IV, II

18 A footbridge is supported by diagonal braces that form a handrail, as shown below. Which pair of angles could be compared to determine if the rail is parallel to the bridge deck?



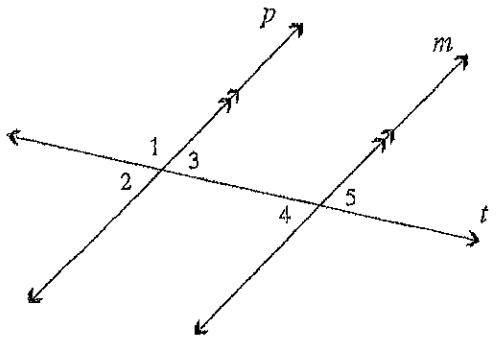
A. $\angle b$ and $\angle g$
B. $\angle c$ and $\angle h$
C. $\angle e$ and $\angle h$
D. $\angle f$ and $\angle g$

19 The template below is used to make an Amish quilt. Which of the following types of angles is not represented within the quilt template below?



A. acute
B. reflex
C. obtuse
D. straight

20 Which set has two true statements about the diagram below?



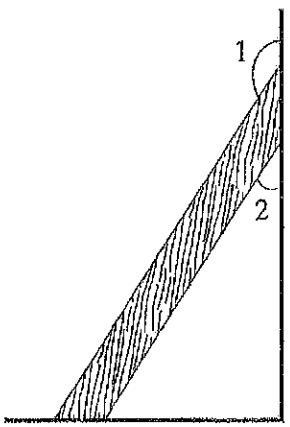
A. • $\angle 2 \cong \angle 5$ ✓
   • $\angle 3$ and $\angle 4$ are corresponding angles ✗

B. • there are two transversals and one parallel line ✗
   • $\angle 3$ and $\angle 4$ are alternate interior angles ✓

C. • $\angle 1 \cong \angle 5$ ✗
   • $\angle 3$ and $\angle 4$ are alternate interior angles ✓

D. • there are two parallel lines and one transversal ✓
   • $\angle 3$ and $\angle 4$ are alternate interior angles ✓

21 In the diagram below, the wall is supported by a brace cut from 2'×4' lumber.



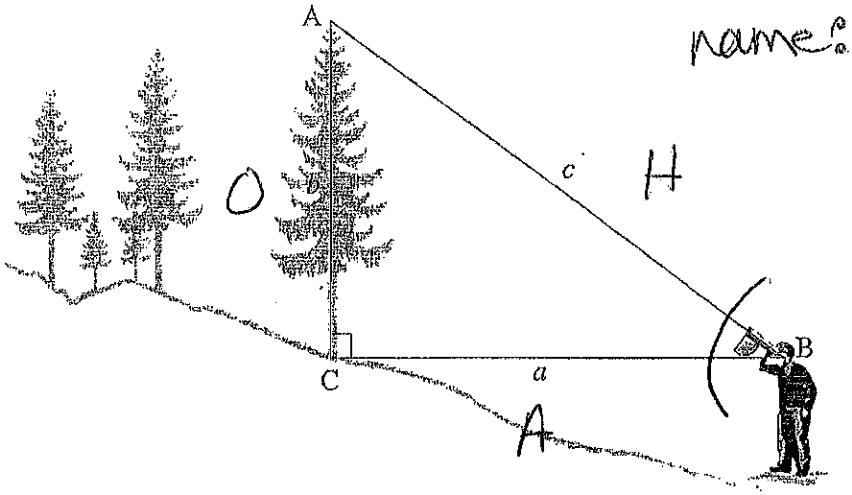
What is the relationship between $\angle 1$ and $\angle 2$?

A. corresponding angles
B. alternate exterior angles
C. vertically opposite angles
D. exterior angles on the same side of the transversal

Chapter 8 : Math 10AW

name: _____

1 In the diagram below, determine $\sin \angle B$.



(A.) $\frac{b}{c}$

B. $\frac{b}{a}$

C. $\frac{a}{c}$

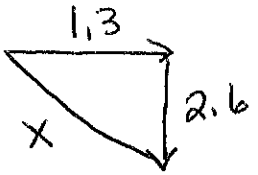
D. $\frac{a}{b}$

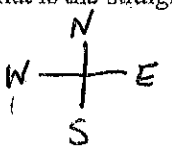
$\sin B = \frac{O}{H} = \frac{b}{c}$

2. Mani left his house and walked 1.3 km due east and then 2.6 km due south. What is the straight line distance between Mani and his house?

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

A. 1.9 km
B. 2.8 km
(C.) 2.9 km
D. 3.9 km





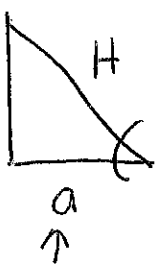
$1.3^2 + 2.6^2 = c^2$

$1.69 + 6.76 = c^2$

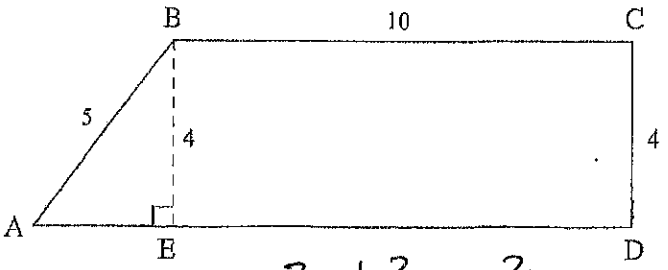
$\sqrt{8.45} = \sqrt{c^2}$ $c = 2.9$

3 Which statement is always true about the adjacent side in a right triangle?

A. The adjacent side is opposite the right angle. × H
B. The adjacent side is across from the given angle. × O
C. The adjacent side is the shortest side in the right triangle. not always
(D.) The adjacent side meets the hypotenuse at the given angle. ✓ O



4. What is the length of AD to confirm that ABCD is a right trapezoid?



$c^2 - b^2 = a^2$

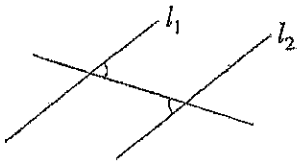
$5^2 - 4^2$

$25 - 16 = \sqrt{9} = \sqrt{a^2}$ $a = 3$

A. 3 units
B. 4 units
C. 6 units
D. 13 units

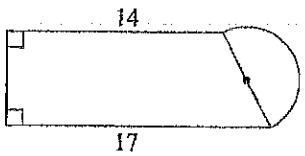
5. Which of the following situations can be solved using trigonometry?

A.



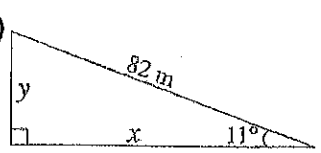
Is l_1 parallel to l_2?

B.



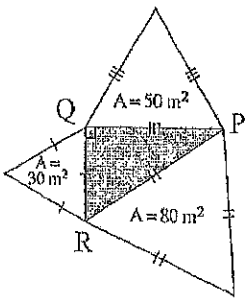
What is the area of this figure?

C.



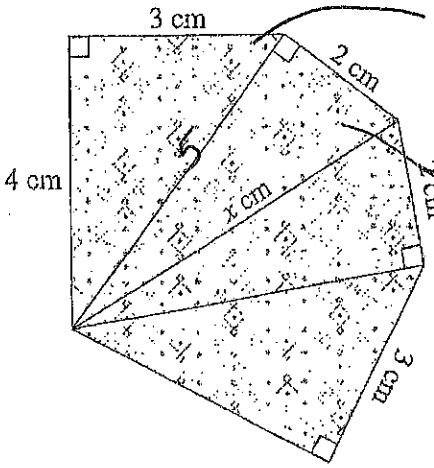
What are the lengths of x and y?

D.



Given the areas of the three equilateral triangles, is PQR a right triangle?

6 Part of a quilting pattern is shown below.



$a^2+b^2=c^2$
3^2+4^2
$\sqrt{25}=c^2 \therefore c=5$

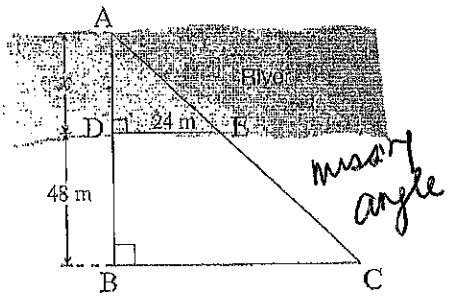
2^2+5^2
$4+25$
$\sqrt{29}=\sqrt{c^2}$

What is the value of x in the diagram?

A. 3 cm
B. $\sqrt{12}$ cm
C. 5 cm
D. $\sqrt{29}$ cm

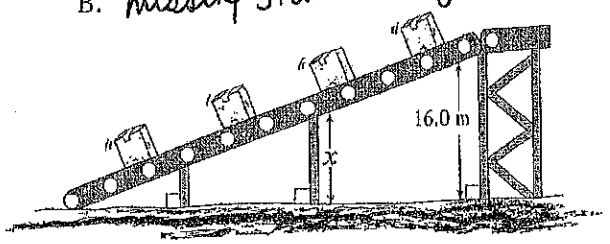
7 In which of the following situations is there enough information given to calculate x?

A.

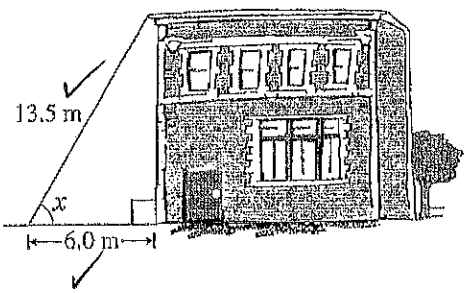


missing angle

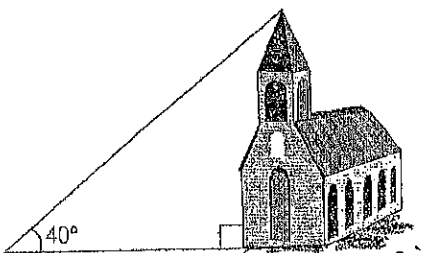
B. missing side or angle



C.



D.

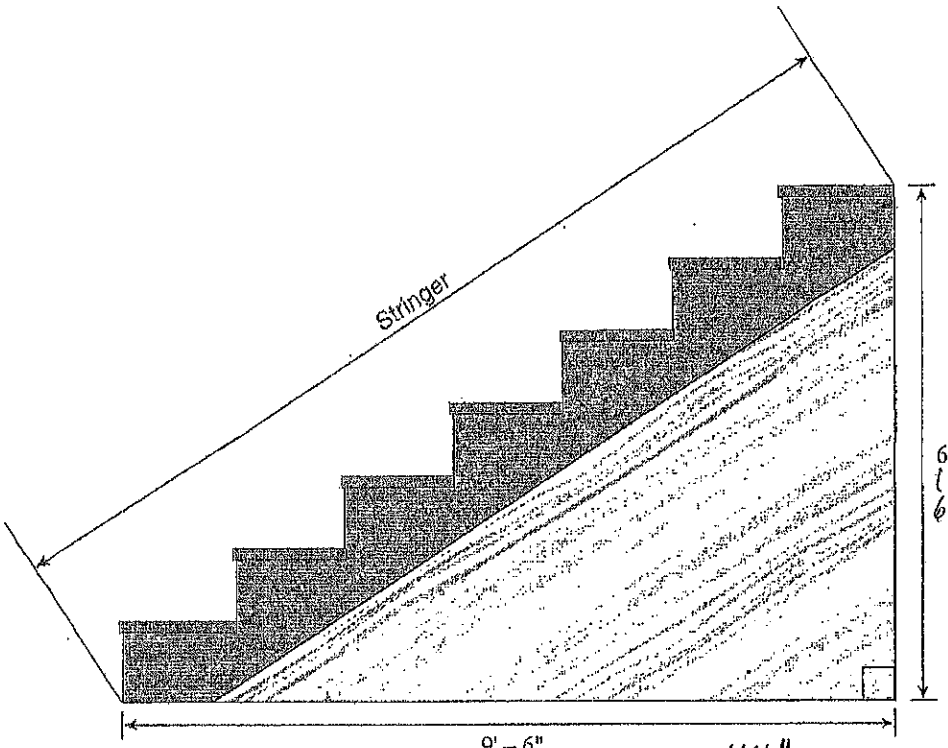


missing side

8 Bob is standing on a surveyor's mark. He measures a 61° angle of elevation to the top of a building 72 m tall. How far away from the base of the building is the surveyor's mark?

A. 40 m
B. 64 m
C. 82 m
D. 130 m

9 What is the length of the stringer of the staircase below?



6x12 = 72+3 = 75"

9x12 = 108+6 = 114"

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

114^2+75^2

$12996+5625$

$\sqrt{18621}$

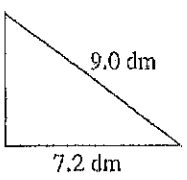
$=136.5$ in $\div 12$

11.4 ft

A. 4.0 ft
B. 7.2 ft
C. 11.4 ft
D. 15.8 ft

10 Which of the triangles below is a right triangle?

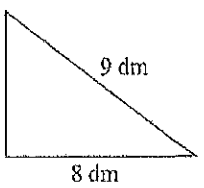
A. yes



$5.4^2+7.2^2=9^2$

$81=81$

B. NO

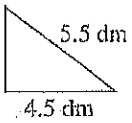


$6^2+8^2=9^2$

$36+64=81$

$100 \neq 81$

C. NO

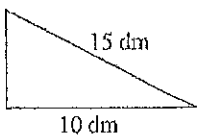


$3.5^2+4.5^2=5.5^2$

$12.25+20.25=30.25$

$32.5 \neq 30.25$

D. NO

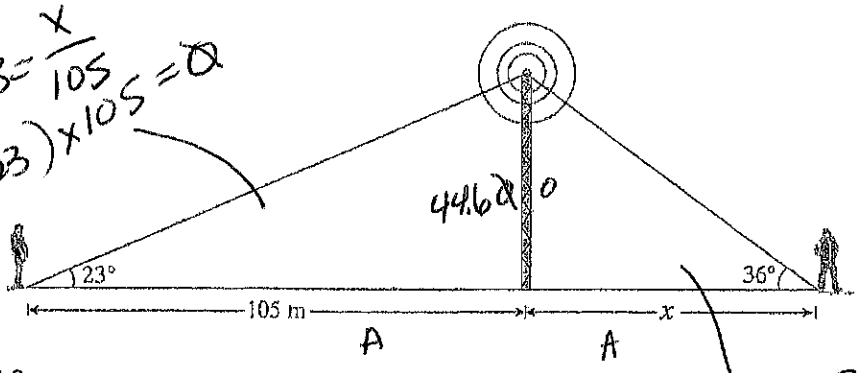


$5^2+10^2=15^2$

$25+100=225$

$125 \neq 225$

11 Janelle and Mandeep are standing on opposite sides of a cell phone tower. Janelle is standing 105 m from the tower. Her angle of elevation to the tower is 23°. Mandeep's angle of elevation to the tower is 36°. How far from the base of the tower is he standing?



$\tan 23 = \frac{x}{105}$

$(\tan 23) \times 105 = x$

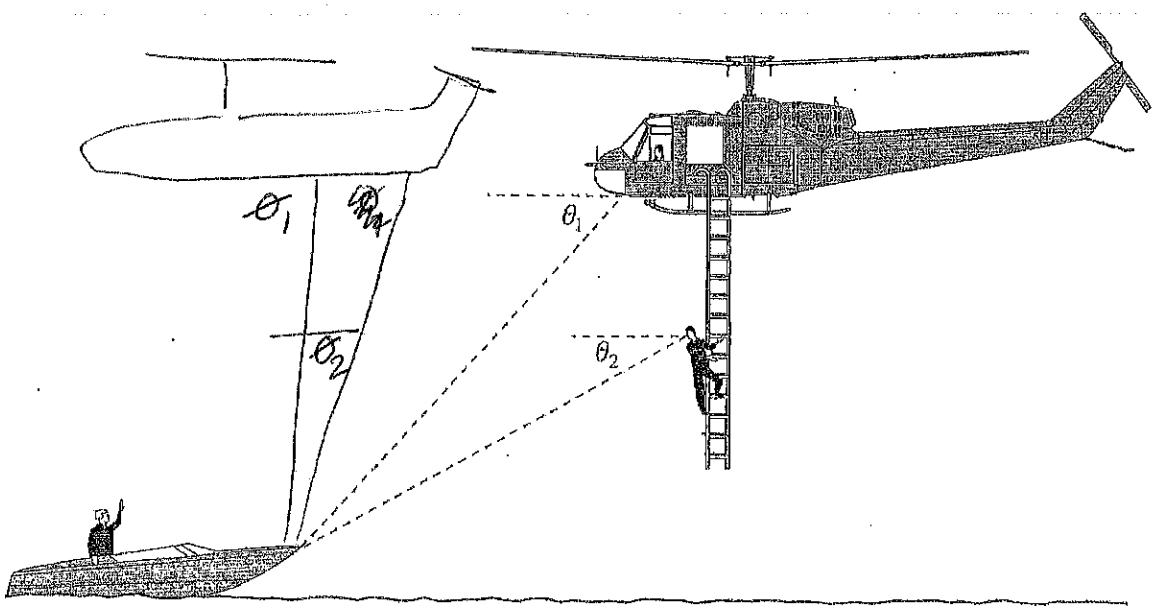
44.6 m

$\tan 36 = \frac{44.6}{x}$

$x = \frac{44.6}{\tan 36} = 61.3$

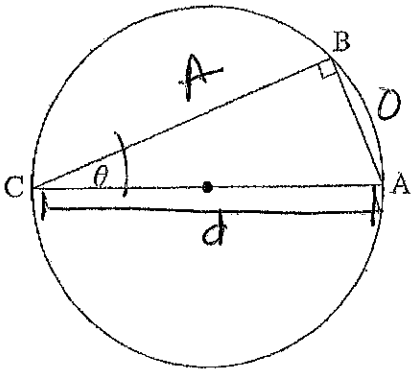
A. 33.2 m
B. 36.1 m
C. 56.5 m
(D.) 61.3 m

12 As a rescue helicopter approaches a boat in distress, the pilot and the rescue technician on the ladder observe the boat from different angles of depression. As the helicopter moves forward, how will these angles change?



A. θ_1 will increase; θ_2 will decrease
B. θ_1 will decrease; θ_2 will increase
(C.) θ_1 will increase; θ_2 will increase
D. θ_1 will decrease; θ_2 will decrease

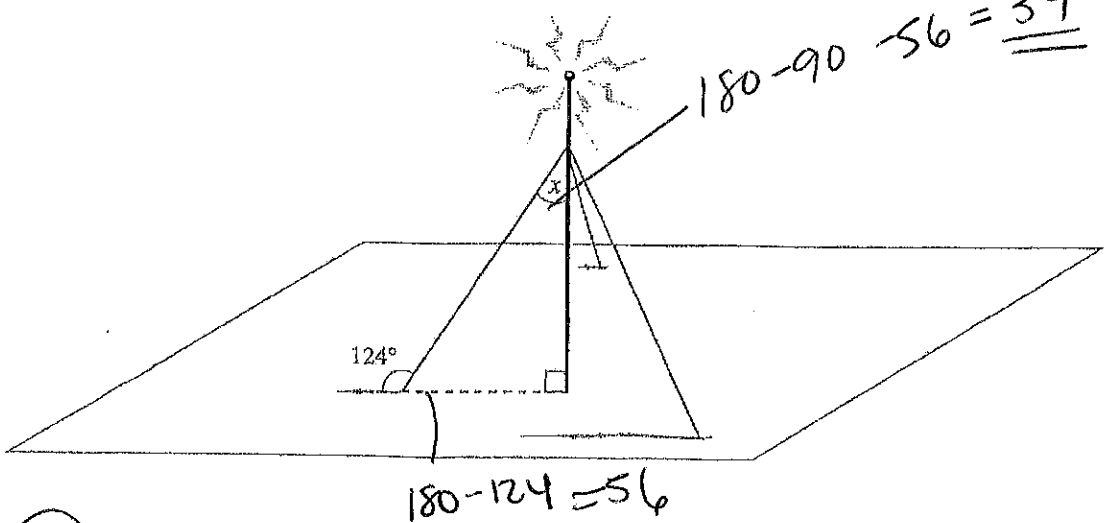
13 Given the diagram below, which set of statements is correct?



I.	The diameter is opposite to angle θ. ✗
II.	The hypotenuse is the diameter. ✓
III.	The adjacent side is the long leg of ΔABC. ✓
IV.	The size of angle θ can be learned if we know only the diameter of the circle. ✗ need one side or other angle

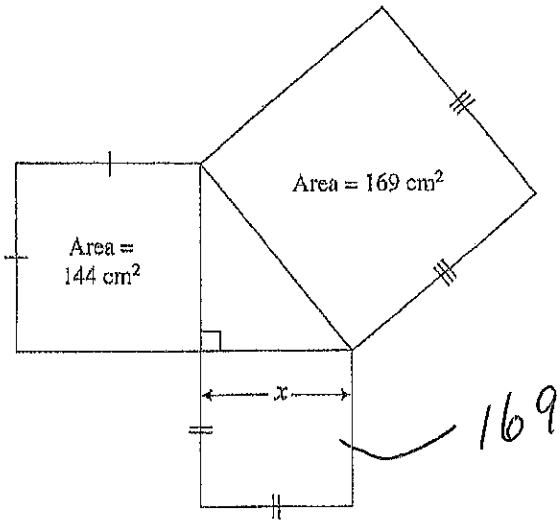
A. I and II only
B. II and III only
C. II and IV only
D. III and IV only

14 A radio broadcast tower is supported by three cables, as shown in the diagram below. What is the measure of angle x?



A. 34°
B. 46°
C. 56°
D. 146°

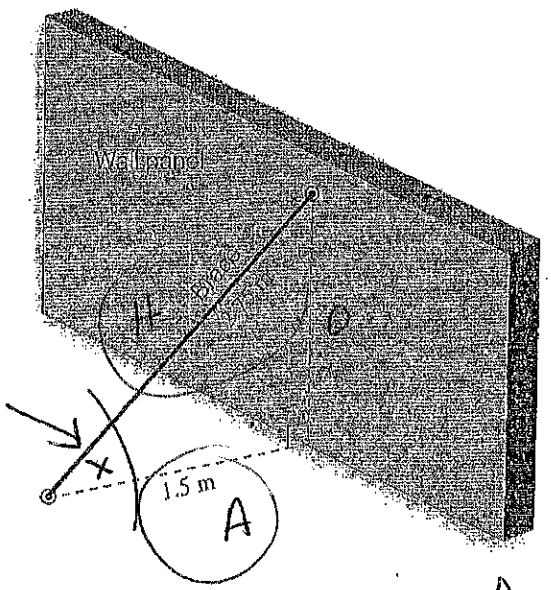
15 In the diagram below, determine the length of x.



$169 - 144 = \sqrt{25} = 5$

A. $\sqrt{1}$ cm
B. 5 cm
C. 25 cm
D. $\sqrt{313}$ cm

16 The brace is 2.75 m long and must be anchored 1.5 m from the base of the wall. What angle does the brace make with the ground?



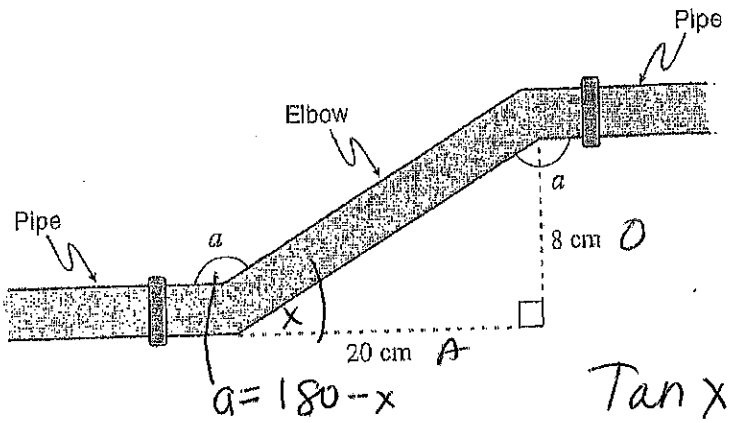
A. 27°
B. 33°
C. 57°
D. 61°

$\cos x = \frac{A}{H}$

$\cos x = \frac{1.5}{2.75}$

$\cos^{-1}(1.5 \div 2.75) = 57°$

17 Two pipes are installed parallel but offset as shown below. To join them, an "elbow" pipe will be custom made. What should be the measure of $\angle a$?



A. 22°
B. 68°
C. 112°
D. 158°

$\tan x = \frac{8}{20}$

$x = 22^\circ$

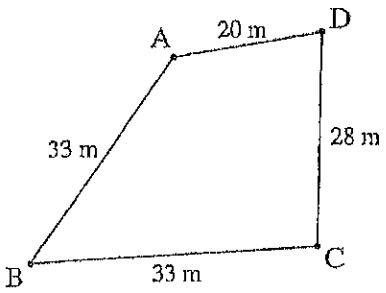
$a = 180 - 22$

$= 158$

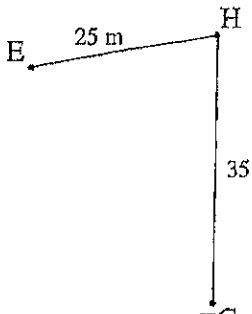
Chapter 9: MathIOAW Name: _____

1 Gina drew a scale representation of a field (see Polygon C). For instance, she drew a line 2.2 cm to represent the actual measure (20 m) of this side (AD). Gina needs to complete the drawing of Polygon D so that both polygons are similar.

Polygon C



Polygon D



$\frac{25}{20} = 1.25$

$33 \times 1.25 = 41.25\text{ m} \div 10 = 4.125\text{cm}$

What is the measure of line FG?

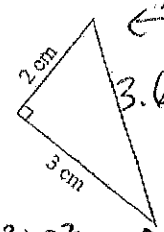
$20\text{m} = 2\text{cm}$ $1\text{cm} = 10\text{m}$

$25\text{m} =$

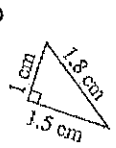
A. 3.63 cm
B. 4.54 cm
C. 18.75 cm
D. 41.25 cm

2 Which of the triangles below are similar?

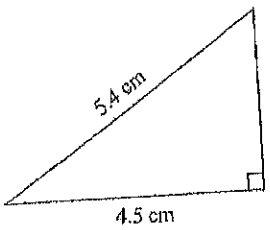
I



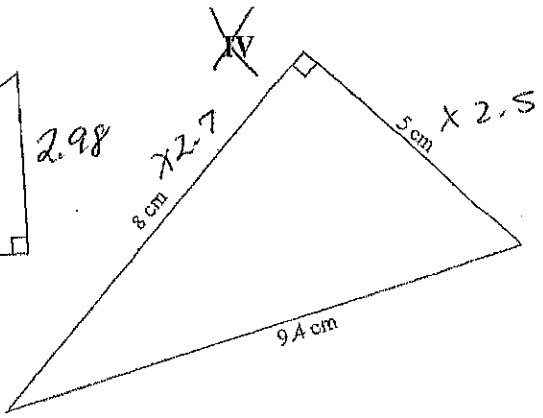
II



III



IV



$\times 2$

$2^2 + 3^2 =$

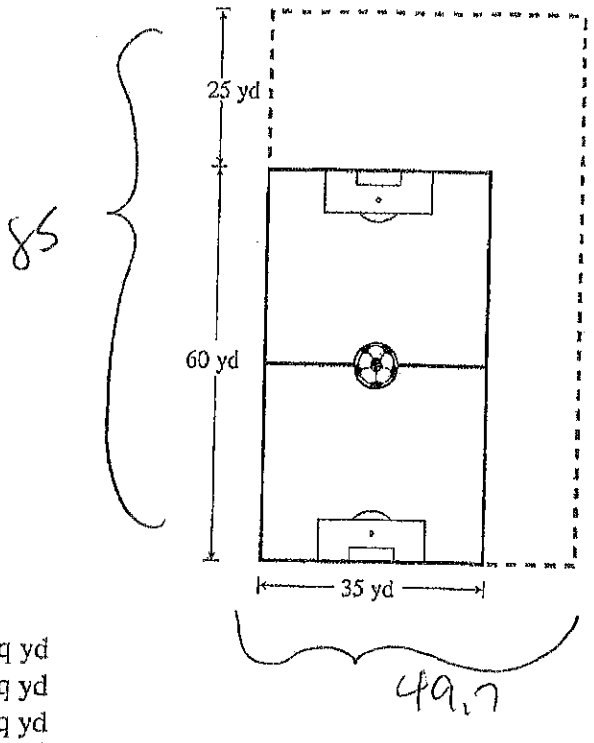
$\times 1.5$

$5.4^2 - 4.5^2$

$\times 2.5$

A. I and II only
B. II and IV only
C. I, II and III only
D. II, III and IV only

3 A small soccer field is to be enlarged, though its shape will stay the same. What will be the area of the new field?



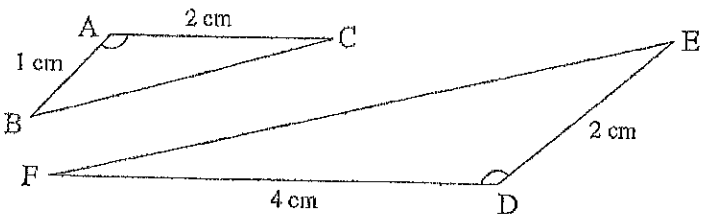
$\frac{85}{60} = 1.42$

$35 \times 1.42 = 49.7$

$85 \times 49.7 = 4224.5$

A. 2100 sq yd
B. 2300 sq yd
C. 4215 sq yd
D. 5100 sq yd

4 Which property proves that ΔABC is similar to ΔDEF?



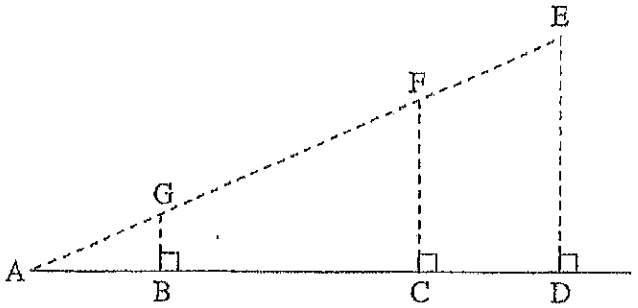
A. $\frac{AB}{DE} = \frac{AC}{DF}$

B. $AC = ED$

C. $\angle A = \angle D$

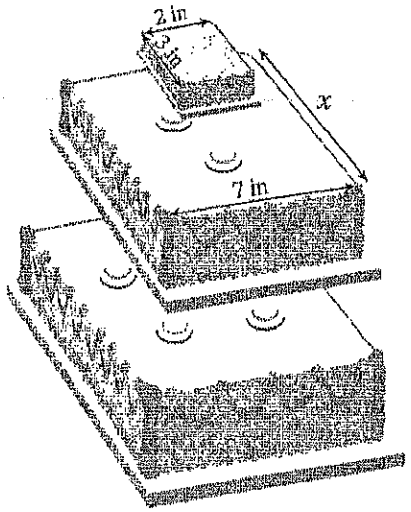
D. $\frac{AC}{BC} = \frac{DE}{EF}$

5 Which statement correctly expresses a similarity between two triangles in the diagram below?



A. $\Delta AGB \sim \Delta CED$ X
B. $\Delta AGB \sim \Delta ACF$ X wrong order
C. $\Delta ACF \sim \Delta ADE$ ✓
D. $\Delta AFC \sim \Delta ADE$ X wrong order

6 The shapes of the top two layers of the wedding cake shown below are similar. Find the length, x, of the middle layer.



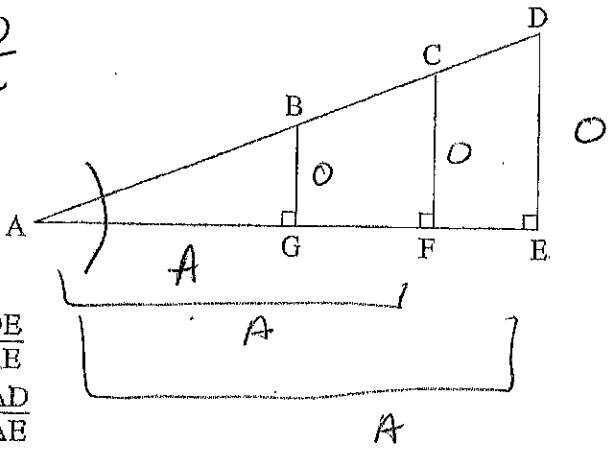
$\frac{7}{2} = 3.5$

$3 \times 3.5 = 10.5$

A. 3.5 in
B. 4.7 in
C. 8.0 in
D. 10.5 in

7 Consider the similar triangles shown below. Select the relationship that could be used to generalize the formula for the tangent ratio for $\angle A$.

$\tan A = \frac{O}{A}$



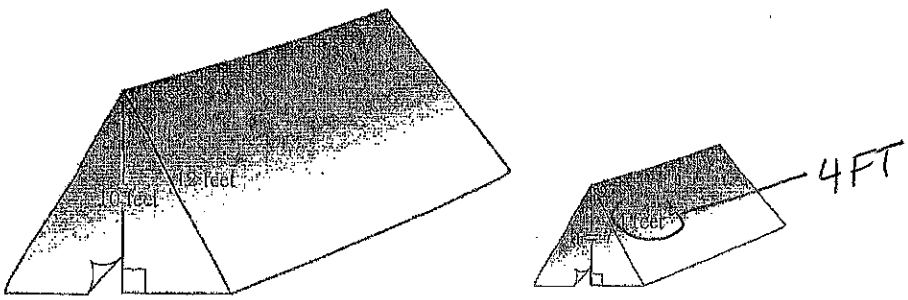
A. $\frac{BG}{AG} = \frac{CF}{AF} = \frac{DE}{AE}$

B. $\frac{AB}{AG} = \frac{AC}{AF} = \frac{AD}{AE}$

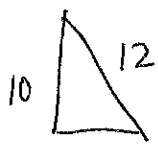
C. $BG = CF = DE$

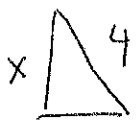
D. $\Delta ABG \cong \Delta ACF \cong \Delta ADE$

8 The two tents below are similar. What is the height of the smaller tent?



A. 2.0 feet
B. 3.3 feet
C. 4.8 feet
D. 6.0 feet





$\frac{12}{4} = 3$

$\frac{10}{3} = 3.\overline{3}$