

Mental Math

Grade 10 Essential Mathematics (20S)

E-1

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. How tall is a door in centimetres if it is 2.2 m tall?
2. The ratio comparing the distance on a map to the distance in real life is 1 cm:1000 m. If the distance from your house to your school on the map is 4 mm, how far do you live from school?
3. If 36% of 500 is 180, what is 18% of 500?
4. Solve for w : $w \div 6 = 2$
5. The Pythagorean theorem is $a^2 + b^2 = \underline{\hspace{2cm}}$.

Answers

220

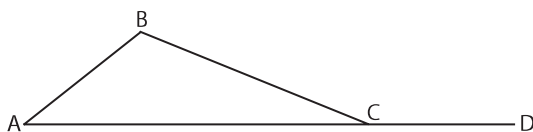
400 m

90

12

c^2

Unit Questions



6. Name two acute angles in the diagram above.
7. Name two obtuse angles in the diagram above.
8. Name one straight angle in the diagram above.

$\angle BAC$ (or $\angle A$)
and $\angle BCA$

$\angle ABC$ (or $\angle B$)
and $\angle BCD$

$\angle ACD$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-2

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. Identify the type of angle that has a measure of 315° .
2. Convert 24 inches into feet.
3. You are supposed to be at work for 8:00 every morning. You arrive at work at 8:17 because a train delayed you. If the hour is divided into quarters when determining late penalties, how much time are you penalized?
4. You have received a \$50 bill for your birthday. At the music store, your total cost is \$30.75. How much change will you get back?
5. What time do you arrive at home if you leave for a movie at 8:30 p.m., drive for 20 minutes, wait for 25 minutes, watch a movie for 1 hour and 45 minutes, and drive home for 20 minutes?

Answers

reflex

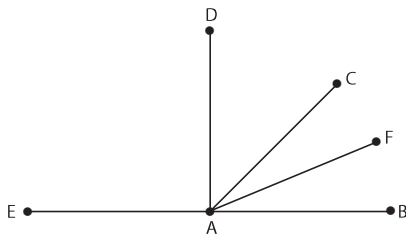
2'

30 minutes

\$19.25

11:20 p.m.

Unit Questions



6. Name an angle that is approximately half the measure of $\angle EAD$.
7. Estimate the measure of $\angle CAB$?
8. Name an angle with a measure of approximately 22.5° .

$\angle DAC$ or $\angle CAB$

$\approx 45^\circ$

$\angle CAF$ or $\angle FAB$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-3

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. You know that your glass holds 1 cup of milk. Would this be a good referent to use to find out how much water your water bottle can hold?
2. The distance from the MTS Centre to Polo Park is 5.1 km. How far is it to a doughnut shop that is halfway between the two?
3. Your gross income is \$980. Estimate your CPP (4.95%).
4. Travelling to Calgary, you notice that after 5 hours of driving you have travelled 515 km. What is your average speed during that time?
5. Solve for r : $\frac{r}{5} = \frac{10}{25}$

Answers

Yes, but not very accurate.

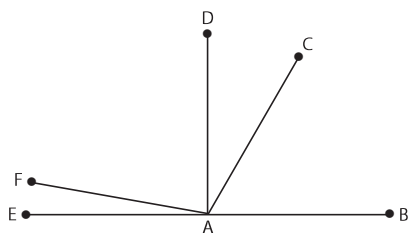
2.55 km

\approx \$49

103 km/h

2

Unit Questions



6. Estimate the measure of $\angle BAC$ to the nearest 10° .
7. Estimate the measure of $\angle EAC$ to the nearest 10° .
8. Estimate the measure of $\angle EAF$.

$\approx 60^\circ$

$\approx 120^\circ$

$\approx 10^\circ$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-4

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. An angle that has a measure of 110° is called a(n) _____ angle.
2. The scale of a miniature pyramid model is 1 cm: 70 cubits. The miniature's height is 4 cm. How tall is the real pyramid?
3. For breakfast you order coffee for \$2.50, orange juice for \$3.75, pancakes for \$8.50, and fruit salad for \$3.25. What is the total?
4. Approximate the tip on an \$18 bill if you want it to be about 15% of your bill.
5. For every 8 hours he works, Brian is paid a flat rate of \$50 plus 10% of his sales. If, in 8 hours, Brian sells \$740 in merchandise, how much money will he make in total?

Answers

obtuse

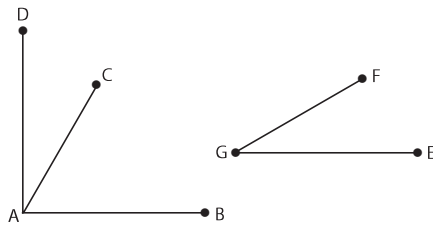
280 cubits

\$18.00
(before taxes)

\$2.70

\$124

Unit Questions



6. Name an angle that was copied to create $\angle EGF$.
7. Name an angle that is closest to a right angle in the diagram above.
8. If $\angle EGF$ is 28° , estimate the measure of $\angle BAC$.

$\angle DAC$ or $\angle CAD$

$\angle DAB$ or $\angle BAD$

$\approx 62^\circ$

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-5

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. Rewrite the fraction in lowest terms: $\frac{24}{28}$
2. Solve for t : $15t - 5 = 40$
3. You are on your way to Calgary, driving on the Trans-Canada Highway. Your speed is constant at 100 km/h. If you have been driving for 3.3 hours at this speed, how far have you driven?
4. Adrian's time card for this week looks like this: Monday to Friday, 7 a.m. to 1 p.m.; Saturday and Sunday, 6 a.m. to 10 a.m. How many hours did he work this week?
5. A garden in your backyard is 2 m long and 1 m deep. What is the area of the garden?

Answers

$\frac{6}{7}$

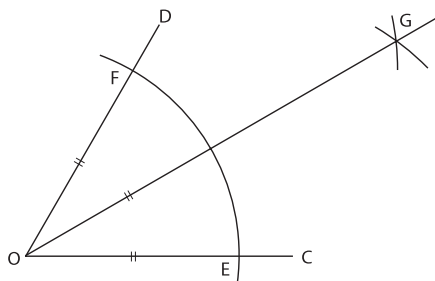
3

330 km

38

2 m²

Unit Questions



6. Where must the point of the compass be placed to draw the arcs to create the "X" at point G?
7. If the measure of $\angle FOE$ is 36° , what is the measure of $\angle FOG$?
8. If the measure of $\angle EOG$ is 28° , what is the measure of $\angle FOG$?

at F and E

18°

28°

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-6

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. Write the following number in scientific notation: 356 300 000 000.
2. Write the following number as a decimal number: 45.87×10^{-4} .
3. When you were 3, your brother's age was double yours. How much older is he?
4. Put the following numbers in order from smallest to largest: 43, 12, 3.5×10^1 , 760%, 21.
5. Your brother asks you to trade him coins for a \$5 bill. He gives you 4 nickels, 3 dimes, 5 quarters, and 3 loonies. Is this a fair trade?

Answers

3.563×10^{11}

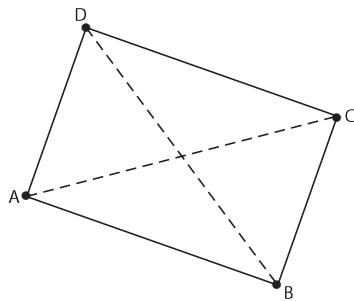
0.004 587

3 years

760%, 12, 21,
 3.5×10^1 , 43

No

Unit Questions



6. In rectangle ABCD as shown, name one pair of parallel lines.
7. In rectangle ABCD as shown, name one pair of perpendicular lines.
8. Classify the diagonals of ABCD as parallel, perpendicular, or neither.

AD // BC or
AB // CD

AD \perp DC or DC
 \perp BC or BC \perp
AB or AB \perp AD

neither

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-7

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. Isabella gets paid double-time on statutory holidays. This past week was Labour Day. If she works 8 hours that day at \$9/hour, how much will she be paid.
2. Courtney is drawing out her name in art class. She changes the colour of each letter so that the colours go from red to blue to green before starting over again. What colour will the 'y' in her name be?
3. Subtract: $\frac{9}{2} - \frac{5}{2}$
4. You have 6 blueberries, 4 raspberries, and 8 slices of strawberry in your bowl of cereal. If you get at least one piece of fruit with every mouthful, what is the maximum number of bites it takes to finish your breakfast?
5. The angle at the corner of a picture frame is 90° . It is bisected by a cut, where the two sides have been attached together. What is the measure of the bisected angle?

Answers

\$144

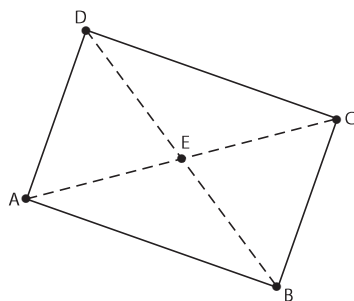
blue

$$\frac{4}{2} = 2$$

18

45°

Unit Questions



6. Given rectangle ABCD, name an angle that is the complement of $\angle CDE$.
7. Name an angle that is the supplement of $\angle CEB$.
8. If $\angle CAD$ is 28° , what is the measure of its complement?

$\angle ADE$ or $\angle CBE$

$\angle BEA$ or $\angle DEC$

62°

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-8

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. You are facing north. If you turn 360° to your right, which direction are you facing?
2. Because you have a doctor's appointment, you have to leave work at 3:45 instead of 4:30 p.m. How much time are you penalized?
3. The size of the park across from your house is about 23 yards across. What is this distance in feet?
4. There are 3 boys and 2 girls invited to your birthday party. If each boy eats 2 pieces of cake and each girl eats 1 piece, how many pieces of cake will be eaten (not including what you eat)?
5. If each piece of the cake (from the question above) is $\frac{1}{10}$ th of the cake, will there be enough cake for you to have a piece?

Answers

North

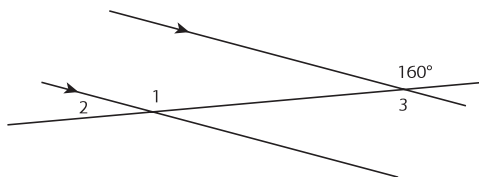
45 minutes

69

8

Yes

Unit Questions



6. Name the relationship between $\angle 1$ and $\angle 3$.
7. Write the measure of $\angle 1$.
8. Write the measure of $\angle 3$.

interior
alternate angles

160°

160°

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-9

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. The Blackhawks have won twice as many games as the Maple Leafs. The Maple Leafs have won 5 fewer games than the Oilers. If the Oilers have won 13 games, how many games have the Blackhawks won?
2. Kaitlin types 50 words per minute. It took her 30 minutes to write her essay for English. Assuming she was typing the whole time, how many words are in her essay?
3. Write 0.456 as a percent.
4. What are “complementary angles”?
5. How do you calculate net pay?

Answers

16

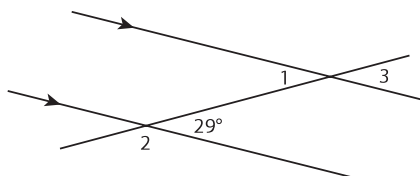
1500

45.6%

two angles that add up to 90°

gross pay
subtract
deductions

Unit Questions



6. Write the measure of $\angle 1$.
7. Write the measure of $\angle 2$.
8. Write the measure of $\angle 3$.

29°

151°

29°

Other Questions

9.

10.

Mental Math

Grade 10 Essential Mathematics (20S)

E-10

Unit E: Angles and Parallel and Perpendicular Lines

General Questions

1. What are “supplementary angles”?
2. In Winnipeg, Fort Street and Garry Street are parallel to each other. Will these two streets ever cross?
3. In Winnipeg, Main Street and Broadway are perpendicular to each other. Will these two streets ever cross?
4. Your bed is 2 m long. If you are 180 cm tall, will you fit on your bed?
5. At noon, you go for lunch for 45 minutes. You return to work for 3 more hours, and then you drive home in 45 minutes. A clock in your house reads 5:30. How many minutes fast is your clock?

Answers

two angles that add up to 180°

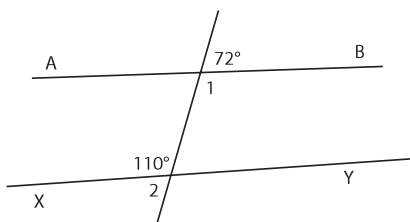
No

Yes

Yes

60

Unit Questions



6. What is the measure of $\angle 1$?
7. What is the measure of $\angle 2$?
8. Is line AB parallel to line XY?

108°

70°

No

Other Questions

9.

10.