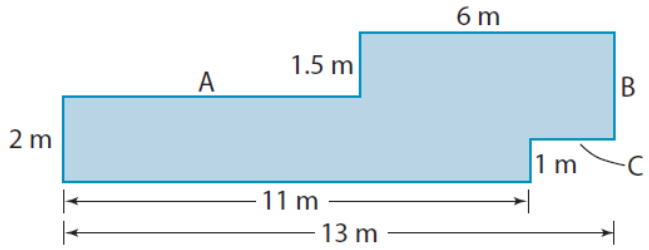
Finance and Workplace 11 Exam Review

Working With Scale, pages 60–71

1. Determine the missing dimensions.



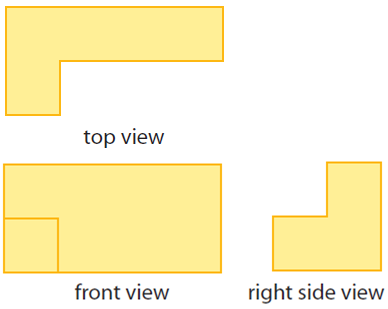
2. Danny's toy tractor is a 1 : 16 scale model of the actual tractor.

a) The wheelbase of the toy tractor is 16 cm. How long is the wheelbase of the real tractor?

b) Th e front tread range of the real tractor is 60 in. What is the front tread range of the toy tractor?

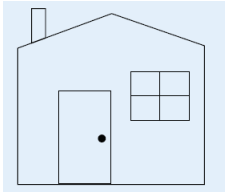
3. The object shown is made from linking cubes. Create a set of orthographic drawings of the object.

4. The picture shows a set of orthographic drawings of a 3-D object. On isometric dot paper create an isometric drawing of the object.

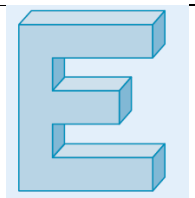


6. The picture shows a set of Allen keys. The keys f t into the green arms, which fit into the centre piece. On paper draw an exploded view diagram of the Allen key.

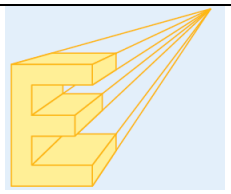
1. What kind of drawing is this diagram?
A exploded view drawing
B isometric drawing
C one-point perspective drawing
D orthographic drawing



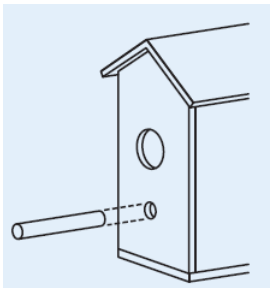
2. What kind of drawing is this diagram?
A exploded view drawing
B isometric drawing
C one-point perspective drawing
D orthographic drawing



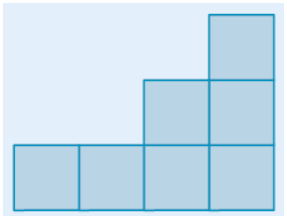
3. What kind of drawing is this diagram?
A exploded view drawing
B isometric drawing
C one-point perspective drawing
D orthographic drawing



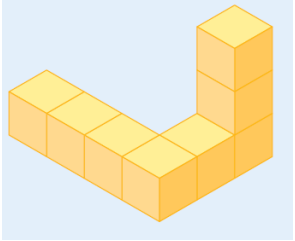
4. What kind of drawing is this diagram?
A exploded view drawing
B isometric drawing
C one-point perspective drawing
D orthographic drawing



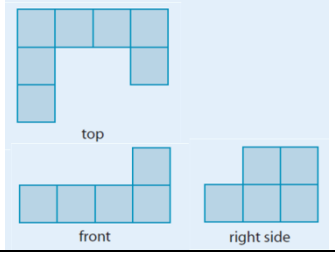
5. What kind of drawing is this diagram?
A exploded view drawing
B isometric drawing
C one-point perspective drawing
D orthographic drawing



6. Draw the front view, top view, and side view of the object shown here.



7. Create an isometric drawing of the object shown in the orthographic diagrams.



8. a) Create a one-point perspective drawing of a triangular prism. **b)** Identify the point of perspective of your drawing.	

Unit Analysis:

Convert:

a) 50 cm to inches

b) 30 lbs to kg.

c) 2.5 hours to seconds

d) 75 km/h to m/s

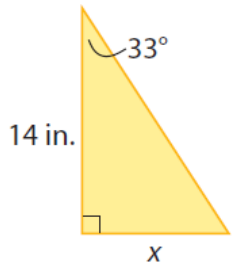
e) 300^{o}F to ^{o}C

f) 100^{o}C to ^{o}F

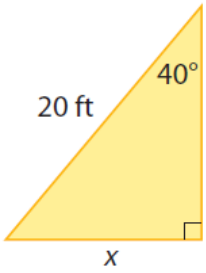
Right Triangles, pages 308–321

1. Determine the indicated value in each triangle. Express your answer to the nearest tenth of a unit.

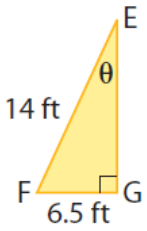
a)



b)



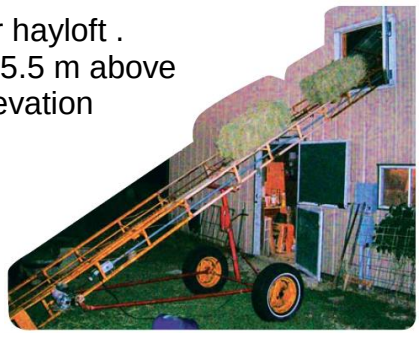
c)



2. The sail of a personal sailboat is in the shape of a right triangle. The sail is 175 cm wide at the bottom. The angle of elevation from the corner of the sail to the top is 65°. How tall is the sail to the nearest tenth of a centimetre?

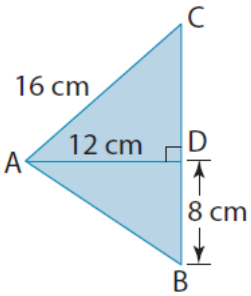
3. Josie is on a ladder washing windows. The ladder makes an angle of elevation of 75° with the ground. If the windows are 24 ft above the ground, how long should the ladder be? Sketch the scenario and show your work.

4. Some farmers use a hay elevator to move small bales of hay into their hayloft . The base of this hay elevator is 8.5 m from the barn. The loft opening is 5.5 m above the ground. The hay elevator is old and can move hay at an angle of elevation of no more than 15°. Can this elevator be used to put hay into this loft ? Explain your reasoning.



5. a) Determine the measure of ∠CAD.

b) Determine the measure of ∠DAB.

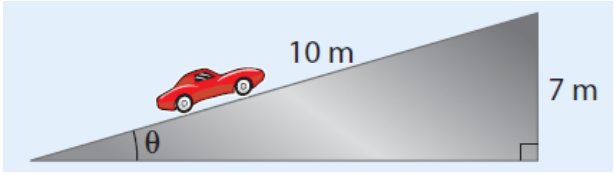


6. A radio antenna is supported by two guy wires. Wire 1 is 35 ft long and makes an angle of elevation of 44° with the ground. Wire 2 is attached to the ground 17 ft from the base of the antenna and makes an angle of elevation of 55° with the ground. Both wires are attached to the top of the antenna.

a) Sketch the scenario.

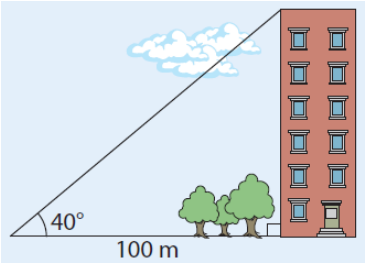
b) How tall is the antenna? Express your answer to the nearest foot.

1. What is the angle of elevation of the ramp?



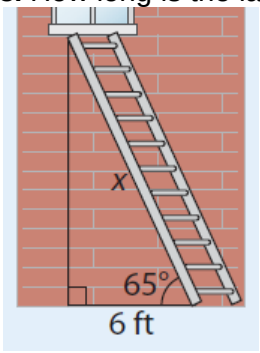
A 60° **B** 56° **C** 44° **D** 30°

2. How tall is the building?



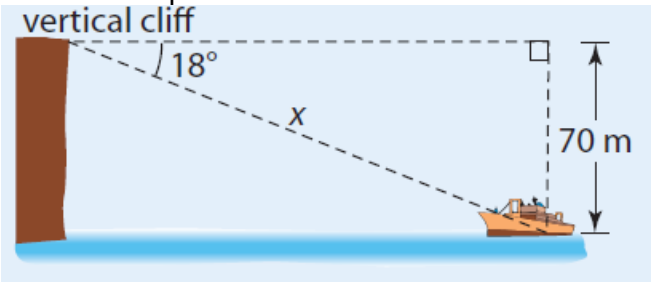
A 50 m **B** 64 m **C** 84 m **D** 93 m

3. How long is the ladder?



A 10 ft **B** 12 ft **C** 14 ft **D** 18 ft

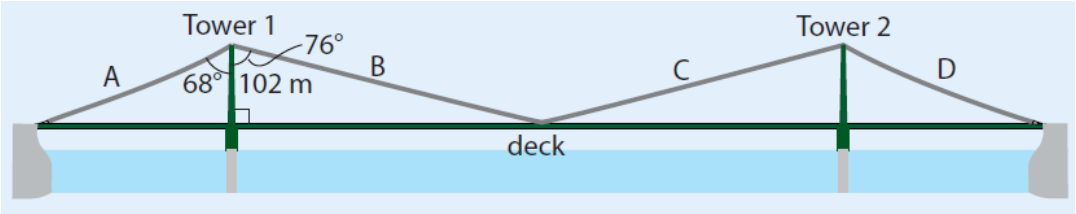
4. What is the diagonal distance from the top of the cliff to the ship?



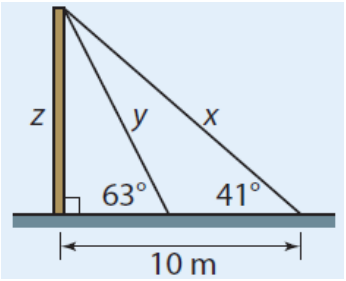
A 110 m **B** 205 m **C** 227 m **D** 258 m

5. Dennis is using a conveyor mounted on a truck to move shingles to a roof top. The house is 7.5 m tall. The truck is 14.6 m from the house.
a) Draw and label a sketch of the situation.
b) Determine the angle of elevation needed to clear the roof top of the house.
c) How long should the conveyor be? Express your answer to the nearest tenth of a metre.

6. The Macdonald Bridge in Halifax, NS, is being inspected. The height of Tower 1 is 102 m. Cable A makes an angle of 68° with the tower. Cable B makes an angle of 76° with the tower.
What is the length of the deck from cable A to cable B?



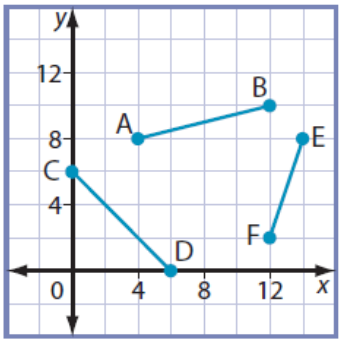
7. Lisa works for the city maintenance department. She has been asked to install two guy wires to support a new flagpole in the town square.



a) Determine the amount of cable needed for the first wire (*x*).
b) Determine the height of the flagpole (*z*).
c) Determine the amount of cable needed for the second wire (*y*).
d) Determine the total amount of cable Lisa will need, to the nearest metre.

What Is Slope?, pages 262–273

1. Determine the slope of each line segment.



2. Complete the table.

Rise	Run	Slope
0	6 m	
2 in.	3 in.	
2 m	200 cm	
4 m	0	
60 cm	3 m	

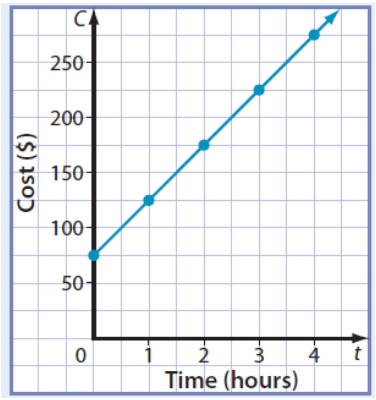
4. A bike ramp has a slope of 1:2. What angle does the ramp make with the ground, to the nearest degree?

5. Determine the angle of elevation of a road with the following grades. Express your answer to the nearest degree. **a)** 0% **b)** 5% **c)** 17%

7. a) Graph the data in the table and describe the slope.

x	0	1	2	3	4
y	1	4	7	10	13

1. What is the slope of the line?
A 50 **B** 250/3
C 4 : 2 **D** 2/50



2. For which table does the graph have a constant slope?

A

x	y
1	1
2	2
3	4
4	7
5	11

B

x	y
0	2
2	4
4	6
6	8
8	10

C

x	y
0	5
1	10
2	15
3	20
4	30

D

x	y
0	3
1	6
2	9
3	12
5	15

3. If each table of values is graphed, which line would have the greater slope?

A

x	y
0	2
1	8
2	14
3	20
4	26

B

x	y
0	20
1	21.5
2	23
3	24.5
4	26

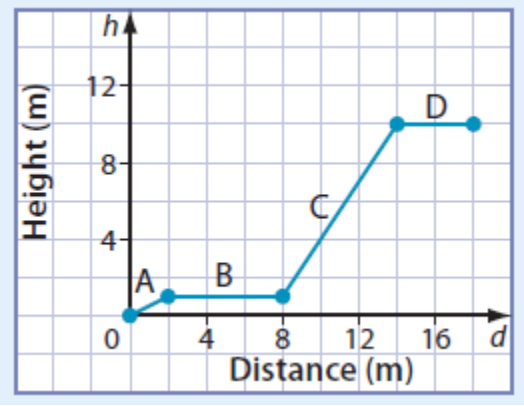
C

x	y
0	60
1	65
2	70
3	75
4	80

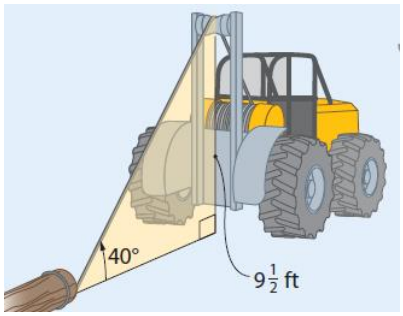
D

x	y
0	100
1	101
2	102
3	103
4	104

4. The graph represents the height versus distance for part of a roller coaster.
a) Determine the slope of each segment shown.
b) Describe each slope.



5. Kayden operates a cable skidder, which pulls logs up a hill to a landing. The top of the cable is 9 ½ ft high and the cable has an angle of elevation of about 40°. How long is the cable, to the nearest foot?



6. A town has a new playground. The top of the slide is 2 m higher than the bottom. Its horizontal distance along the ground is 300 cm.
a) Safety regulations state that the slope of a slide must not exceed 0.577. Will this slide pass an inspection?

b) What horizontal distance meets the requirements for a slide that is 2 m high? Express your answer to the nearest centimetre.

7. An airplane approaching St. John's International Airport is flying at an altitude of 2600 m. Its horizontal distance from the airport is 48 km.
a) Determine the airplane's angle of elevation to the nearest degree.
b) The safe angle of elevation for large planes is 3°. Does this plane have a safe angle of elevation?

8. Maura earned $18 per hour when she started her job. After 6 months, she received an increase of $2 per hour. Six months later, she received another increase of $2 per hour.
a) Graph Maura's earnings over the last 12 months. Does the graph show a constant rate of change in earnings? Explain.
b) Determine the slope of the line that represents each of Maura's salaries.
c) Describe each slope as a rate of change.

Accounts, pages 206–213
2. Jamie needs to save $3500 to buy a used motorcycle in 6 months. Her account currently has $900 in it. How much will she need to save from each pay to achieve her goal? She is paid every Friday. Assume there are 4 weeks in each month.

Budgets, pages 214–227
3. Nick and a friend share a two-bedroom apartment. Nick has a net weekly income of about $600. His budget is shown below.

Month: April			
Income: (5-pay month) $3000			
Expenses:			
Rent: $450	Car lease: $328	Car ins.: $230	Gas: $200
Internet: $45	Cell: $75	Gym: $65	Golf membership: $150
Groceries: $350	Spending money: $500	Loan: $210	Credit card: $200
Total expenses: $2803			

a) Which of Nick's expenses do you think are fixed expenses?

b) How much money does Nick take home in a typical four-pay month?

c) What adjustments would you make to Nick's budget?

Simple and Compound Interest, pages 228–238
4. Calculate the simple interest earned on $500 invested at 4% interest for 3 years. Then, calculate the future value.

5. Use repeated calculations of simple interest to determine the future value of $500 invested at 5% for 2 years with interest compounded annually.

Investing and Borrowing, pages 239–251

6. Use the compound interest formula to solve #5. Did you get the same answer?

7. Trevor is buying a new SUV for $63 000. After trading in his current vehicle, he needs to borrow $46 000. His payments are $889.31 per month for 5 years.

a) How many payments will he make before he owns the SUV?
b) What is the total amount that he will repay to the bank?
c) If Trevor's SUV retains 80% (depreciates 20%) of its value each year, approximately what will his vehicle be worth when he has made the last payment?

3. Which budget item should be considered a variable expense? **A** car insurance **B** loan payment **C** rent **D** groceries	**4.** What is the future value of $1000 invested at 2% for 3 years with simple interest? **A** $60 **B** $1060 **C** $600 **D** $1600
5. Which formula is not a rearrangement of the simple interest formula? **A** $t = \frac{I}{P \times r}$ **B** $r = \frac{I}{P \times t}$ **C** $I = \frac{P \times r}{t}$ **D** $P = \frac{I}{r \times t}$	**6.** Ted invests $4000 at 3% with interest compounded annually. About how long will it take for his investment to double? (Rule of 72) **A** 3 years **B** 24 years **C** 33 years **D** 72 years

7. State the value of *i* (interest rate earned per compounding period) and *n* (number of compounding periods) for the following compound interest problems.
a) $2000 invested at 3% for 4 years with interest compounded semi-annually
b) $500 invested at 3% for 1 year with interest compounded monthly

8. Use the compound interest formula to determine the future value of each investment in #7.

9. Stephanie works part-time aft er school and on weekends at a café. Her monthly budget for February is shown.

Income	
Feb 2 pay	$312.61
Feb 16 pay	$290.09
Expenses	
Save for college	$200.00
Room and board	$160.00
Spending money	$100.00
Clothes	$95.00
Cell phone	$20.00

a) What is Stephanie's total income?
b) What are her total expenses?
c) Stephanie will be paid three times in March. If the "extra" paycheque is $275, suggest what she could do with the additional income.
d) On March 1, Stephanie had $2400 in her college account. She thinks she will need $4000 by September. Is Stephanie on track to meet her goal? If she is, show why. If she is not, suggest what Stephanie can do to meet her goal.

10. Jeff borrows $3500 to renovate his basement into an apartment. He agrees to a 3-year payback schedule with monthly payments of $108.07.
a) How much will Jeff repay to the bank?
b) How much interest will he pay?

11. Jeff rents out his basement apartment for $850 per month.
a) How much income will he earn in the first year?
b) How much income will he earn in the first 3 years, assuming the apartment is always rented?

Choosing a Graph, pages 154–167

1. The manager of Pizzarillo's kept track of the methods customers used to place their orders for one week. The findings are displayed in the table below.

Method of Ordering	# of Orders
Walk-in	38
Cell phone app	20
Telephone	60
Internet	42

a) Draw two appropriate graphs to represent the data.
b) State at least one advantage and one disadvantage of each type of graph.
c) Which type(s) of graph would not be appropriate to represent the data set? Explain.

Interpolating and Extrapolating Values, pages 168–181

2. An oceanographer collected ocean temperature information for different latitudes in Canada. The information is displayed in a table.

Latitude (°N)	Temperature (°F)
10	80
20	79
30	76
40	69
50	56
60	48
70	42

a) Represent the data with an appropriate graph.
b) What trend do you observe in the graph?
c) Interpolate to find the average ocean temperature in Cape Breton, NS, which is located at 46° N.
d) The northernmost point in Canada is Cape Columbia on Ellesmere Island, NU, at 83° N. Extrapolate to estimate the ocean temperature in Cape Columbia.

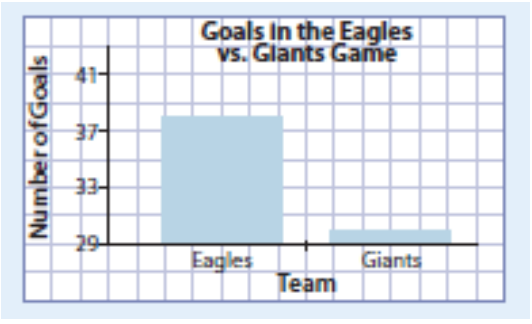
Graphic Representations, pages 182–195

3. The Fiction House online bookstore releases an ad comparing their sales of fiction books to those of their competitor.

a) Do you agree with the ad's statement? Why or why not?
b) Create a graph that more accurately represents the Fiction House data.
c) To find out which store sold more fiction books, what information do you need to know?

1. Which type of graph best shows a trend over time? **A** bar **B** circle **C** histogram **D** line	**2.** Which type of graph best shows discrete data in categories? **A** bar **B** circle **C** histogram **D** line

Use the graph to answer #3 and #4.



3. Who may have drawn the graph?
A The coach of the Eagles team. He is trying to motivate his team to score more goals.
B The agent of the Giants leading scorer. The agent is trying to negotiate more money for his client.
C The owner of the Eagles team. He is trying to sell his team and wants to show how good it is.
D A fan. She is trying to convince her friends that the Giants are the best hockey team.

4. How is the graph misleading?
A The intervals on the vertical scale are not equal.
B The vertical scale does not start at zero.
C The bar representing the Eagles is shown first.
D The bars are drawn inaccurately.

5. Eighty grade 11 students were surveyed to determine their favourite brand of jeans. The results are shown in the table. Which type of graph would best show that GLG and Shawn's jeans are favoured by 50% of the students?

A bar **B** circle **C** double line **D** line

Brand of Jeans	# of Students
GLG	32
Shawn's	8
Tori	14
Blue Republic	21
Other	5

6. The table shows sales of two smart phone apps for a period of six months.

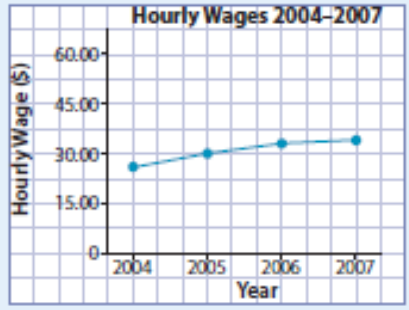
Month	App A	App B
March	$118 000	$122 000
April	$117 000	$124 000
May	$121 000	$124 000
June	$119 000	$126 000
July	$124 000	$127 000
August	$127 000	$128 000

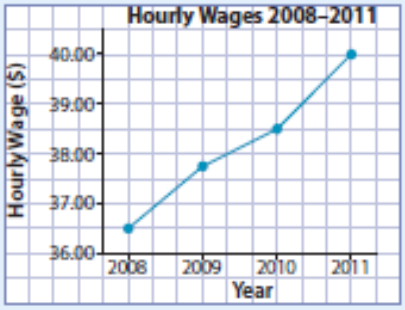
a) Which type of graph would be most appropriate to compare the sales of the apps? Draw the graph. State two observations you can make from the graph.

b) Draw a graph to make App B's sales appear to be increasing faster than App A's. Explain how your graph represents this point of view.

c) Draw a graph to make App A's August sales appear greater than App B's sales for August. Explain how your graph represents this point of view.

7. A new union representative created these two graphs to show his members how much their wages per hour have increased since he took over the position in 2008.



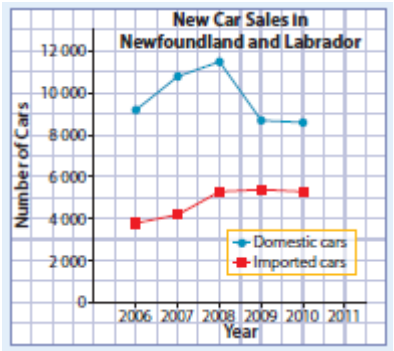


a) What observations can you make from the graph for 2004–2007?
the graph for 2008–2011?

b) How could the graphs be changed to represent the data more accurately? Redraw the graphs.

c) State an observation based on your new graphs.

8. a) Describe the trend in domestic and imported car sales.



b) Extrapolate to predict the sales for domestic cars in 2011 and 2013.

c) Do you think this trend will continue? Explain.