

Revision 6: Similar Triangles and Probability

Name:

Class:

Date:

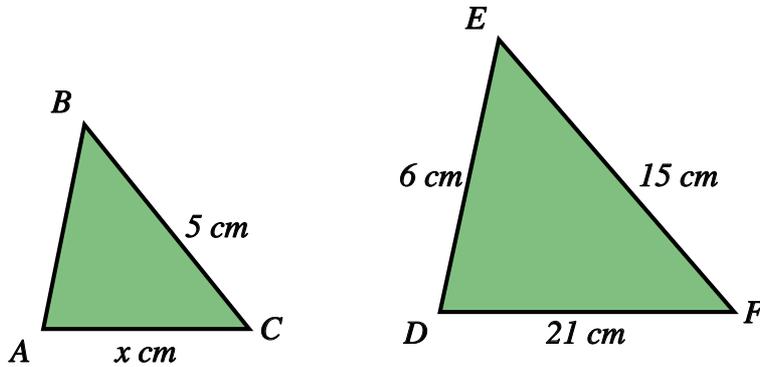
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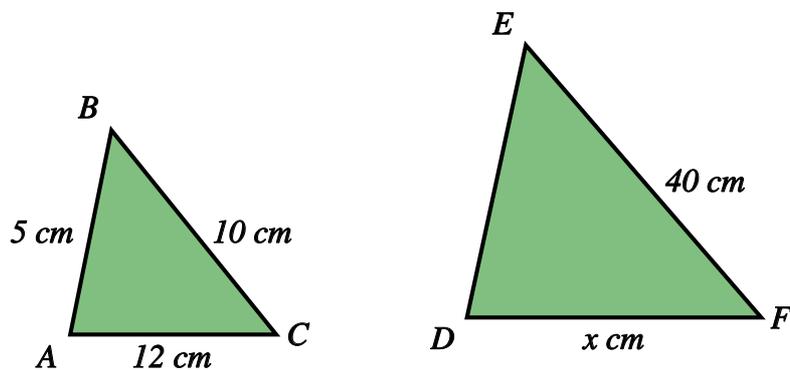
1) Find the missing length, x , in triangle ABC below

[1]



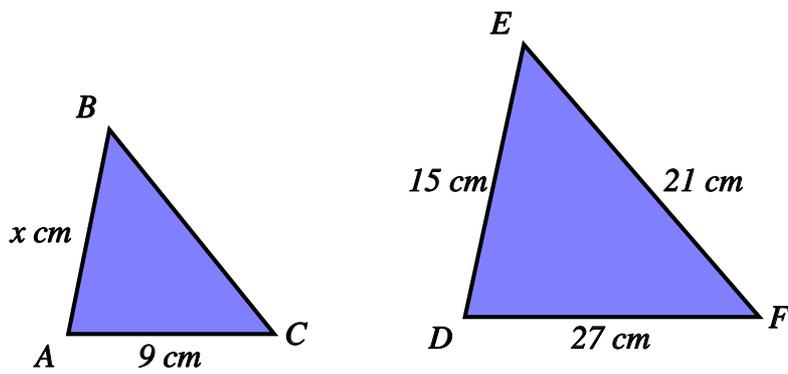
2) Find the missing length, x , in triangle DEF below

[1]



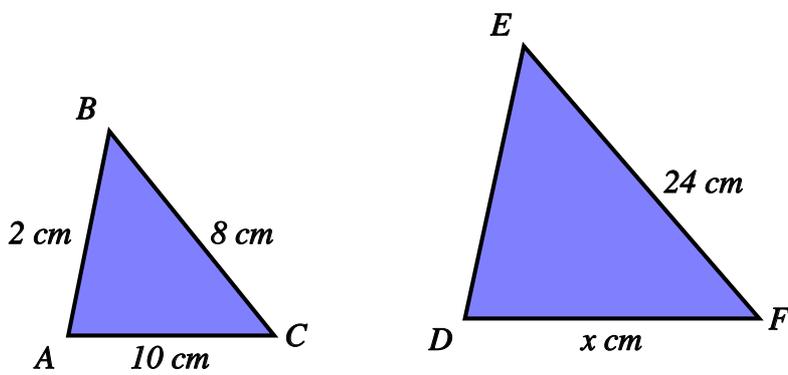
3) Find the missing length, x , in triangle ABC below

[1]

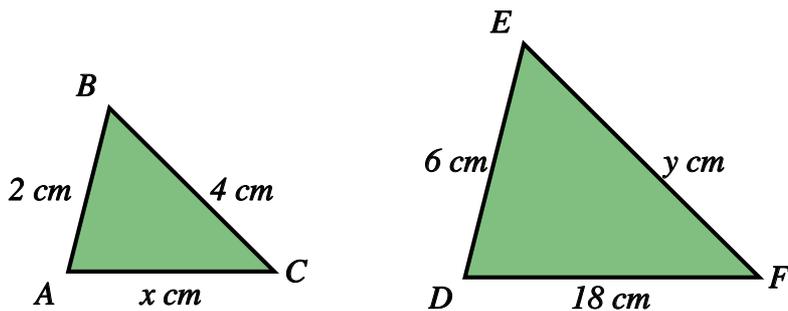


4) Find the missing length, x , in triangle DEF below

[1]



5) Triangle ABC is similar to triangle DEF.

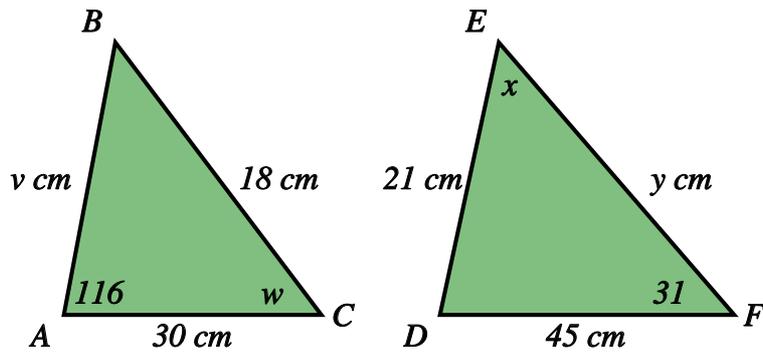


Find a) x

b) y

[1]

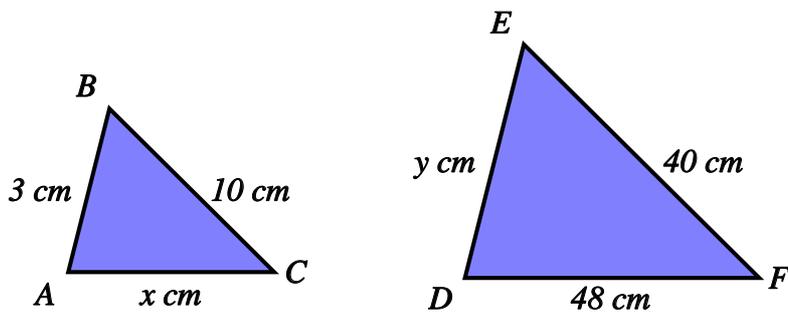
6) Triangle ABC is similar to triangle DEF.



Find a) v b) w c) x d) y

[1]

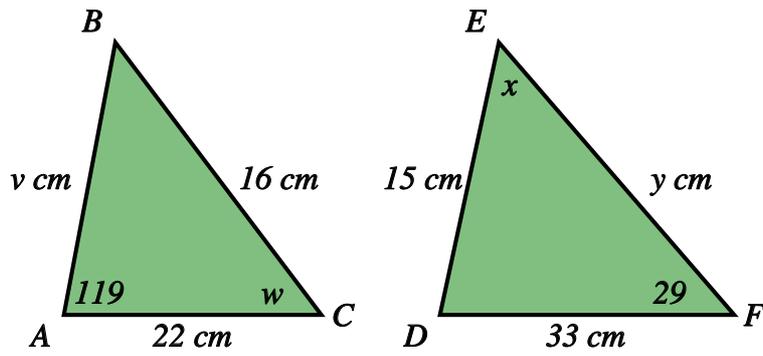
7) Triangle ABC is similar to triangle DEF.



Find a) x b) y

[1]

8) Triangle ABC is similar to triangle DEF.



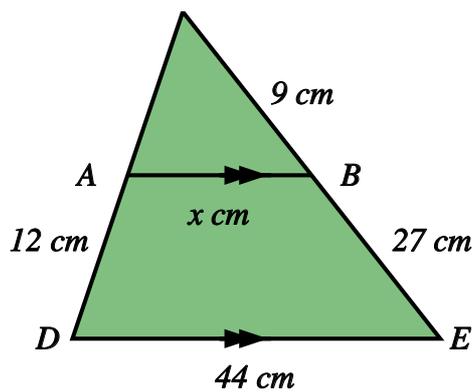
Find a) v

b) w

c) x

d) y

9) Find the missing length, x , in the picture below

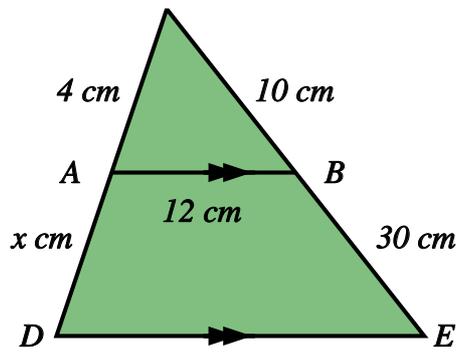


[1]

[1]

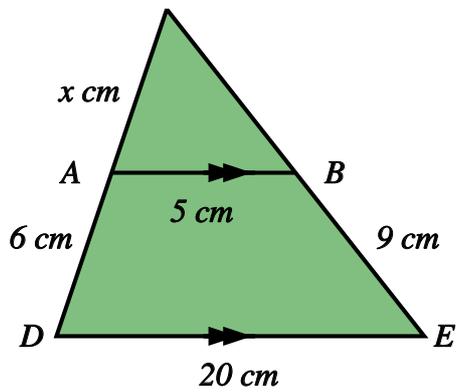
10) Find the missing length, x , in the picture below

[1]



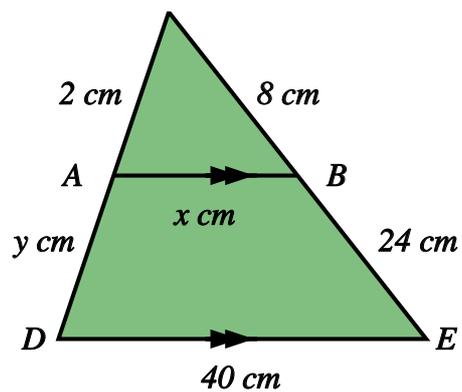
11) Find the missing length, x , in the picture below

[1]



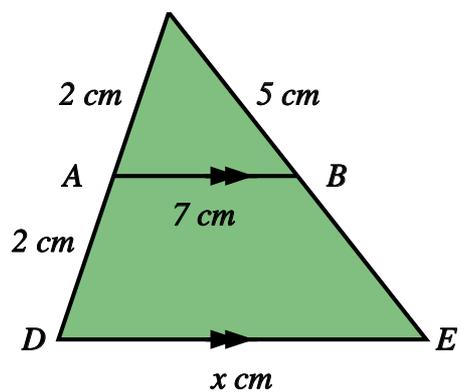
12) Find the missing lengths, x and y , in the picture below

[1]



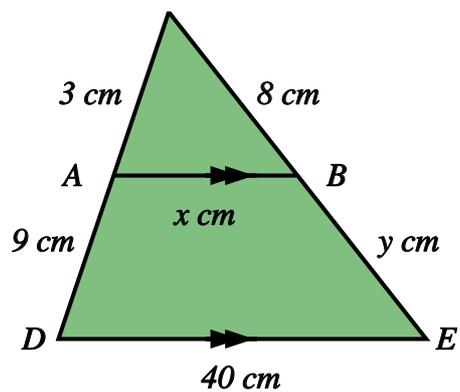
13) Find the missing length, x , in the picture below

[1]



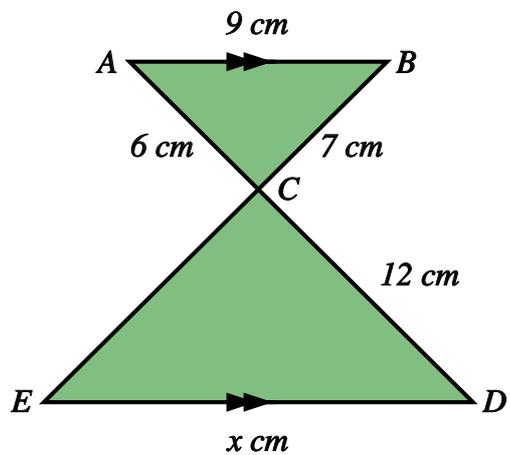
14) Find the missing lengths, x and y , in the picture below

[1]



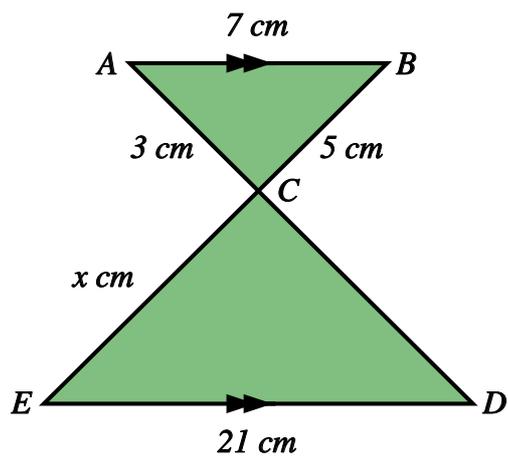
15) Find the missing length, x , in triangle CDE below

[1]



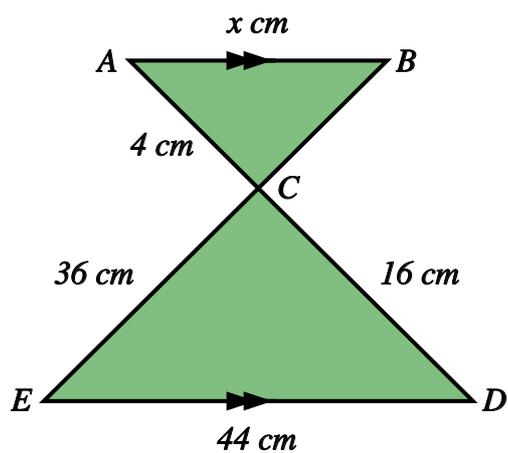
16) Find the missing length, x , in triangle CDE below

[1]



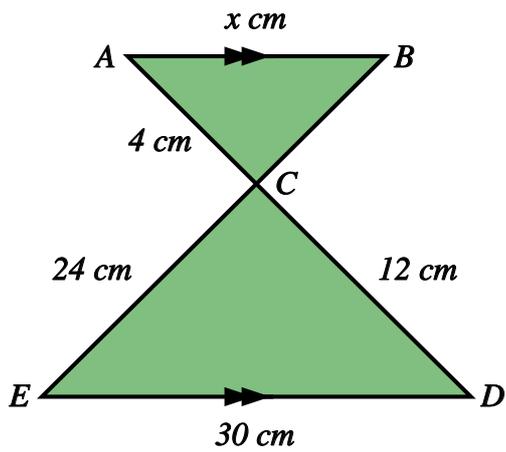
17) Find the missing length, x , in triangle ABC below

[1]



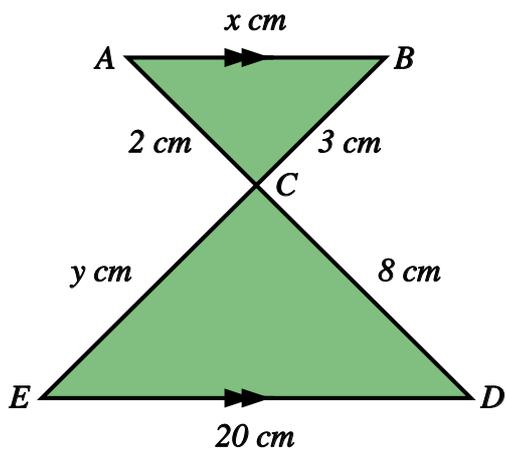
18) Find the missing length, x , in triangle ABC below

[1]



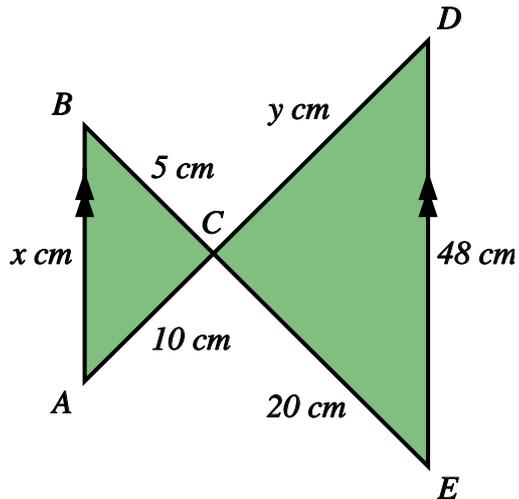
19) Find the missing lengths, x and y , in the diagram below

[1]



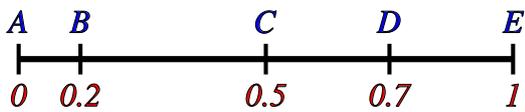
20) Find the missing lengths, x and y , in the diagram below

[1]



21) Describe each position A, B, C, D and E on the probability scale using appropriate vocabulary

[1]



22) Mackenzie bought a bag of sweets, 6 of them are yellow, 3 are green and 5 are orange.

Find the probability that a randomly selected sweet is

a) not yellow

b) yellow or green

[1]

23) The English Alphabet contains 26 letters.

[1]

Find the probability of:

- a) choosing the letter s b) not choosing the letter s

24) One student is chosen at random from the test results given in the table below.

	A	B	C	Total
Male	19	7	20	46
Female	9	3	12	24
Total	28	10	32	70

Find the probability that the student did **not** get a grade A

[1]

25) Brayden tosses a coin. Find the probability he gets a head.

[1]

26) Frank rolls a dice. Find the probability he gets a two.

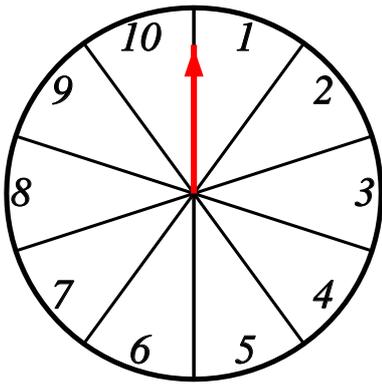
[1]

27) Alfonso rolls a dice. Find the probability he gets a number greater than two.

[1]

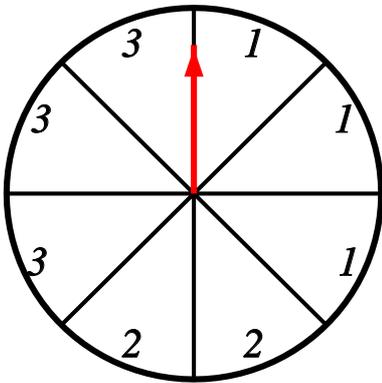
28) Find the probability that for a random spin of the spinner, the arrow points to 9.

[1]



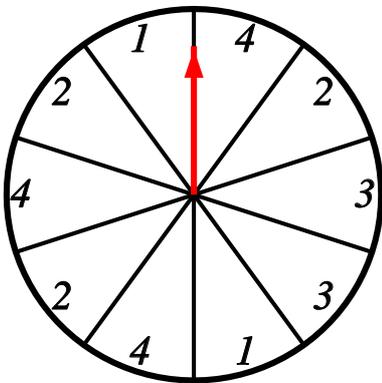
29) Find the probability that for a random spin of the spinner, the arrow points to 2.

[1]



30) Find the probability that for a random spin of the spinner, the arrow points to 2.

[1]



31) If you select a card at random from a standard pack of 52 playing cards (ace is counted as 1), find the probability of choosing:

a) a two of Diamonds

b) a Heart

c) a two

[1]

32) If you select a card at random from a standard pack of cards (ace is counted as 1), find the probability of choosing:

a) an eight of

b) a Club or Diamond

c) a number smaller than 6

[1]

33) A card is drawn randomly from a standard 52-card deck.

[1]

Find the probability that the card drawn is:

a) a diamond or five

b) a jack or spade

c) a four or red card

34) A number is chosen at random from the set of numbers

[1]

1,2,3,4,5,6,7,8,9,10,11,12,13,14

Find the probability that the number is:

- a) an even number
- b) an odd number

35) A number is chosen at random from the set of numbers

[1]

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17

Find the probability that the number is:

- a) a square number
- b) a prime number
- c) a multiple of 4

36) A number is chosen at random from the set of numbers

[1]

1,2,3,4,5,6

Find the probability that the number is:

- a) a factor of 17
- b) a cube number

37) A marble is drawn randomly from a jar that contains 4 purple marbles, 2 brown balls, and 5 yellow marbles.

Find the probability of selecting:

- a) a purple marble
- b) a brown marble
- c) a yellow marble

[1]

38) A marble is drawn randomly from a jar that contains 7 pink marbles, 5 white balls, and 12 blue marbles.

Find the probability of selecting:

- a) a pink marble
- b) a white marble
- c) a blue marble

[1]

39) A counter is drawn randomly from a jar that contains 3 white counters, 5 green balls, and 4 red counters.

Find the probability of selecting:

- a) a counter that is not white
- b) a white or red counter
- c) a blue counter
- d) a counter that is not purple

[1]

40) Corey chooses a letter at random from the word SIX.

[1]

Find the probability that he chooses:

a) an X

b) an S

41) Eduardo chooses a letter at random from the word SYMMETRY.

[1]

Find the probability that he chooses:

a) a T

b) an M

42) Damien chooses a letter at random from the word SIGNIFICANT.

[1]

Find the probability that he chooses:

a) an N

b) an I

43) The sample space below shows the results obtained from tossing a coin and throwing a die.

Find the probability of getting Heads **and** a square number.

		Die					
		1	2	3	4	5	6
Coin	H	H,1	H,2	H,3	H,4	H,5	H,6
	T	T,1	T,2	T,3	T,4	T,5	T,6

[1]

44) The sample space below shows the outcomes from throwing two dice.

Find the probability that the two dice add to 10.

		Dice 1					
		1	2	3	4	5	6
Dice 2	1	1,1	1,2	1,3	1,4	1,5	1,6
	2	2,1	2,2	2,3	2,4	2,5	2,6
	3	3,1	3,2	3,3	3,4	3,5	3,6
	4	4,1	4,2	4,3	4,4	4,5	4,6
	5	5,1	5,2	5,3	5,4	5,5	5,6
	6	6,1	6,2	6,3	6,4	6,5	6,6

[1]

45) The sample space below shows the scores obtained from throwing two dice and adding them together.

Find the probability that the two dice add to 2.

		Dice 1					
		1	2	3	4	5	6
Dice 2	+	1	2	3	4	5	6
	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

[1]

46) The sample space below shows the scores obtained from throwing two dice and adding them together.

Find the probability that the two dice add to 4 or more.

		Dice 1					
		+	1	2	3	4	5
Dice 2	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

47) Two dice are rolled. What is the probability that the sum of the two dice is 5?

[1]

[1]

48) Two dice are rolled. What is the probability that the product of the two dice is 8?

[1]

49) Two dice are rolled. What is the probability that the sum of the two dice is greater than or equal to 9?

[1]

50) Wyatt picks two counters out of a jar that contains 5 white counters and 2 red counters. [1]
Note that he returns the first counter to the jar before he picks the second.

Find the probability that Wyatt picks two red counters.

51) A group of people were asked if they owned a dog. 129 responded "yes", and 94 responded "no". [1]

Find the probability that if a person is chosen at random, they own a dog.

52) A roulette wheel has slots numbered from 0 to 38. [1]

Find the probability that the ball lands on an odd number.

Solutions for the assessment Revision 6: Similar Triangles and Probability

1) $x = 7$ cm

2) $x = 48$ cm

3) $x = 5$ cm

4) $x = 30$ cm

5) $x = 6$ cm, $y = 12$ cm

6) $v = 14$ cm, $w = 31^\circ$, $x = 33^\circ$, $y = 27$ cm

7) $x = 12$ cm, $y = 12$ cm

8) $v = 10$ cm, $w = 29^\circ$, $x = 32^\circ$, $y = 24$ cm

9) $x = 11$ cm

10) $x = 12$ cm

11) $x = 2$ cm

12) $x = 10$ cm, $y = 6$ cm

13) $x = 14$ cm

14) $x = 10$ cm, $y = 24$ cm

15) $x = 18$ cm

16) $x = 15$ cm

17) $x = 11$ cm

18) $x = 10$ cm

19) $x = 5$ cm, $y = 12$ cm

20) $x = 12$ cm, $y = 40$ cm

21) A = impossible, B = unlikely, C = evens, C = likely, D = certain

22) a) $P(\text{not yellow}) = \frac{4}{7}$
b) $P(\text{yellow or green}) = \frac{9}{14}$

23) a) $P(\text{choosing the letter s}) = \frac{1}{26}$

b) $P(\text{not choosing the letter s}) = \frac{25}{26}$

24) $P(\text{did not get a grade A}) = \frac{3}{5}$

25) $P(\text{head}) = \frac{1}{2}$

27) $P(\text{a number greater than two}) = \frac{2}{3}$

28) $\frac{1}{10}$

29) $\frac{1}{4}$

30) $\frac{3}{10}$

31) a) $P(\text{a two of Diamonds}) = \frac{1}{52}$

32) a) $P(\text{an eight of Clubs}) = \frac{1}{52}$

b) $P(\text{a Heart}) = \frac{1}{4}$

b) $P(\text{a Club or Diamond}) = \frac{1}{2}$

c) $P(\text{a two}) = \frac{1}{13}$

c) $P(\text{a number smaller than 6}) = \frac{5}{13}$

33) a) $P(\text{a diamond or five}) = \frac{4}{13}$

34) a) $P(\text{even number}) = \frac{1}{2}$

b) $P(\text{a jack or spade}) = \frac{4}{13}$

b) $P(\text{odd number}) = \frac{1}{2}$

c) $P(\text{a four or red card}) = \frac{7}{13}$

35) a) $P(\text{square number}) = \frac{4}{17}$

36) a) $P(\text{factor of 17}) = \frac{1}{6}$

b) $P(\text{prime number}) = \frac{7}{17}$

b) $P(\text{cube number}) = \frac{1}{6}$

c) $P(\text{multiple of 4}) = \frac{4}{17}$

37) a) $P(\text{purple marble}) = \frac{4}{11}$

38) a) $P(\text{pink marble}) = \frac{7}{24}$

b) $P(\text{brown marble}) = \frac{2}{11}$

b) $P(\text{white marble}) = \frac{5}{24}$

c) $P(\text{yellow marble}) = \frac{5}{11}$

c) $P(\text{blue marble}) = \frac{1}{2}$

39) a) $P(\text{not white}) = \frac{3}{4}$

40) a) $P(\text{an X}) = \frac{1}{3}$, b) $P(\text{an S}) = \frac{1}{3}$

b) $P(\text{white or red}) = \frac{7}{12}$

c) $P(\text{blue}) = 0$

d) $P(\text{not purple}) = 1$

41) a) $P(\text{a T}) = \frac{1}{8}$, b) $P(\text{an M}) = \frac{1}{4}$

42) a) $P(\text{an N}) = \frac{2}{11}$, b) $P(\text{an I}) = \frac{3}{11}$

43) $P(\text{getting Heads and a square number}) = \frac{1}{12}$

44) $P(\text{dice add to 10}) = \frac{1}{12}$

45) $P(\text{dice add to } 2) = \frac{1}{36}$

46) $P(\text{dice add to } 4 \text{ or more}) = \frac{11}{12}$

47) $P(\text{sum is } 5) = \frac{1}{9}$

48) $P(\text{product is } 8) = \frac{1}{18}$

49) $P(\text{sum} \geq 9) = \frac{5}{18}$

50) $P(R \text{ and } R) = 4/49$

51) $\frac{129}{223}$

52) $P(\text{odd number}) = \frac{19}{39}$